

May 1935

TECHNOLOGY REVIEW



technology review

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*It's a bonnie
cigarette Laddie*

*—aye Lassie, one
that's Milder and
Tastes Better*



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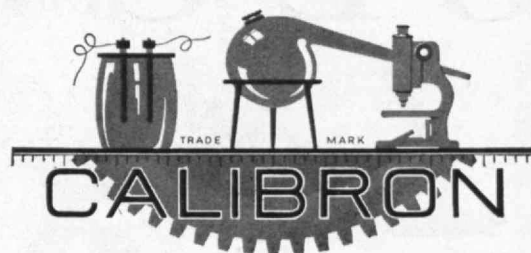
THE TABULAR VIEW

IN commenting on his article on page 304, F. ALEXANDER MAGOUN, '18, writes: "In 1933, with the approval of the Administration, an informal Committee on the Aims and Techniques of Teaching was organized at Technology. It was made up of one representative from practically every department, and although often frankly bewildered, it set about a careful examination of what constitutes an educated man, followed by an attempt to discover and to express the process which produces this illusive pearl of great price. After nearly two years of quiet, consistent effort, the Committee is still very far from making its report. As a portion of my contribution toward its effort to winnow out the truth, a study, only part of which The Review presents, has served as 'intellectual knitting work' for whatever spare time the last two years have afforded. The Committee's conclusions based on these facts belong not here, but in its report." Mr. Magoun is Associate Professor of Humanics at Technology and will be recalled as the author of an article in the November, 1933, issue of The Review, entitled "Training for Leadership."

IN his article "Literary Engineers" (page 313), PAUL C. EATON, '27, details the career of GELETT BURGESS, '87. Mr. Eaton, having deserted civil engineering after acquiring an A.M. at Harvard to become an instructor in English and History at Technology, should have included himself in his inventory of brands snatched from the burning. Mr. Eaton realizes that his roll call may be incomplete and he would welcome other names.

AS a contributor of more than 13 articles to The Review, in the last decade, NORBERT WIENER holds a high place in the roster of our contributors. His collaborator, CARL BRIDENBAUGH, is Assistant Professor of History at M.I.T. ¶ After reading "The Student Agitator" in manuscript, a wise and understanding friend of college youth made the following marginal comment: "The blind acceptance of fixed traditions, and the frenzied embracing of causes, are often exemplifications of mental laziness. They have a kinship to the response to advertising slogans. It is too much to expect that great masses of the population, exposed to radio and tabloids, cramped in their environments and exposed to reiterated trivialities, will think through to judicial conclusions the complex economic and social questions of the times. It is too much to expect this even of the bulk of college youths, with the finest opportunity for such thought the world affords. But it is not too much to expect them to make the attempt. Nor need seasoned thought and balanced pondering be inconsistent with the driving enthusiasm of youth."

"In its short existence, youth must learn that mere exuberance gets nowhere. Races are won by the stoical, calculated application of physical resources. It is no mere chance, when the artificialities of commercialized college sport are absent, that the outstanding athlete is often to be found among the best minds."



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contains a description of our unusual Guaranteed Research service, as well as many illustrations of unique engineering developments. We shall be glad to send you a copy upon request.

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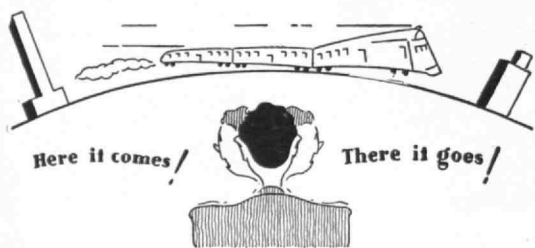
G-E Campus News



MAKING FLAWS SQUAWK

A VALVE used in a General Electric refrigerator unit requires a small steel spring, which, during the time that a refrigerator is in operation, is used several hundred times per minute. A small defect, even a microscopic scratch, would be sufficient to cause the spring to fail after a relatively small number of operations. Consequently a fast, certain means of inspection for the steel ribbon of which the springs are made was necessary.

It is generally known that, if a secondary coil is placed around a core of iron and the iron is placed in a magnetic field, there is a definite relation between the chemical and physical properties of the iron and the resultant electrical wave induced in the secondary coil. Using this knowledge as a base, a General Electric laboratory built an inspection device. The spring material is run through a magnetic field, and the induced current is fed through an amplifier to a loudspeaker. A hum peculiar to the magnetic properties of the material sounds in the loudspeaker as long as the quality of the material is uniform. Any flaw, however, changes the magnetic properties, the magnetic field then becomes unbalanced, and the loudspeaker emits a shrill squawk.



STREAMLINE COMMUTING

PORTLAND-BOSTON commuters will shortly receive a taste of real speed. Fairly before they have a chance to swallow their breakfasts, they will be whisked into North Station by the "Flying Yankee."

In the morning, the train will streak the 115 miles from Portland, Maine, to Boston in 110 minutes. Then during the day, it will make a round trip to Bangor, Maine, making the 250-mile trip each way in 265 minutes. When the business day closes, it will streak back up Portland way with the commuters it brought down in the morning.

The "Flying Yankee" is a 200-foot articulated train, of lightweight, stainless-steel construction. Its three sections are carried on four trucks. Power originates in a 600-horsepower Diesel engine, directly connected with a General Electric generator. Two General Electric traction motors are mounted in the first truck. An auxiliary generator and the control equipment are also built by General Electric.



HOT DOG

PEG is an elderly English setter, who can trace her family back to some of the very best nobility in her breed. When she was younger, she enjoyed nothing more than romping about in the snow. But in the last few years, American winters, with all their sub-zero weather, have not agreed with her too well.

So last year, her owner, H. C. Ward, U. of Wisconsin, '05, of the General Electric office in Rochester, N. Y., decided to heat her kennel. Quite appropriately, he decided to do the job electrically. He installed a length of G-E soil-heating cable, plugged it into an outlet, and turned on the juice.

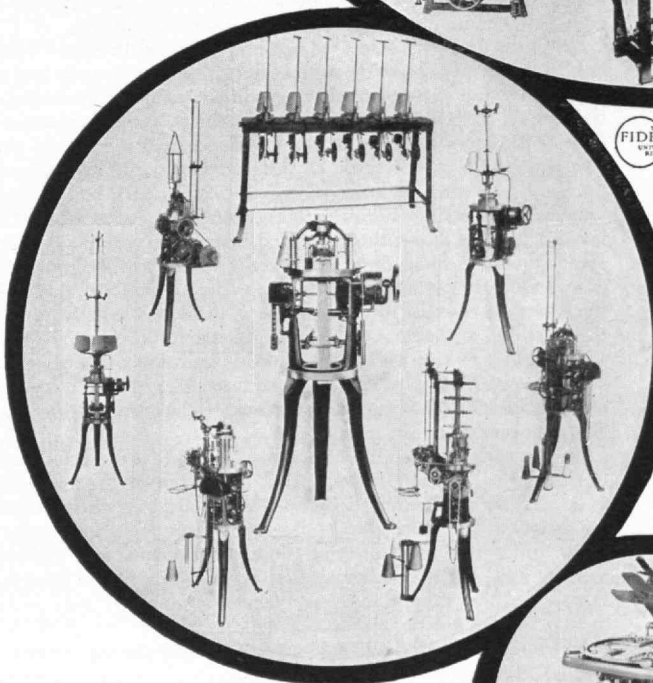
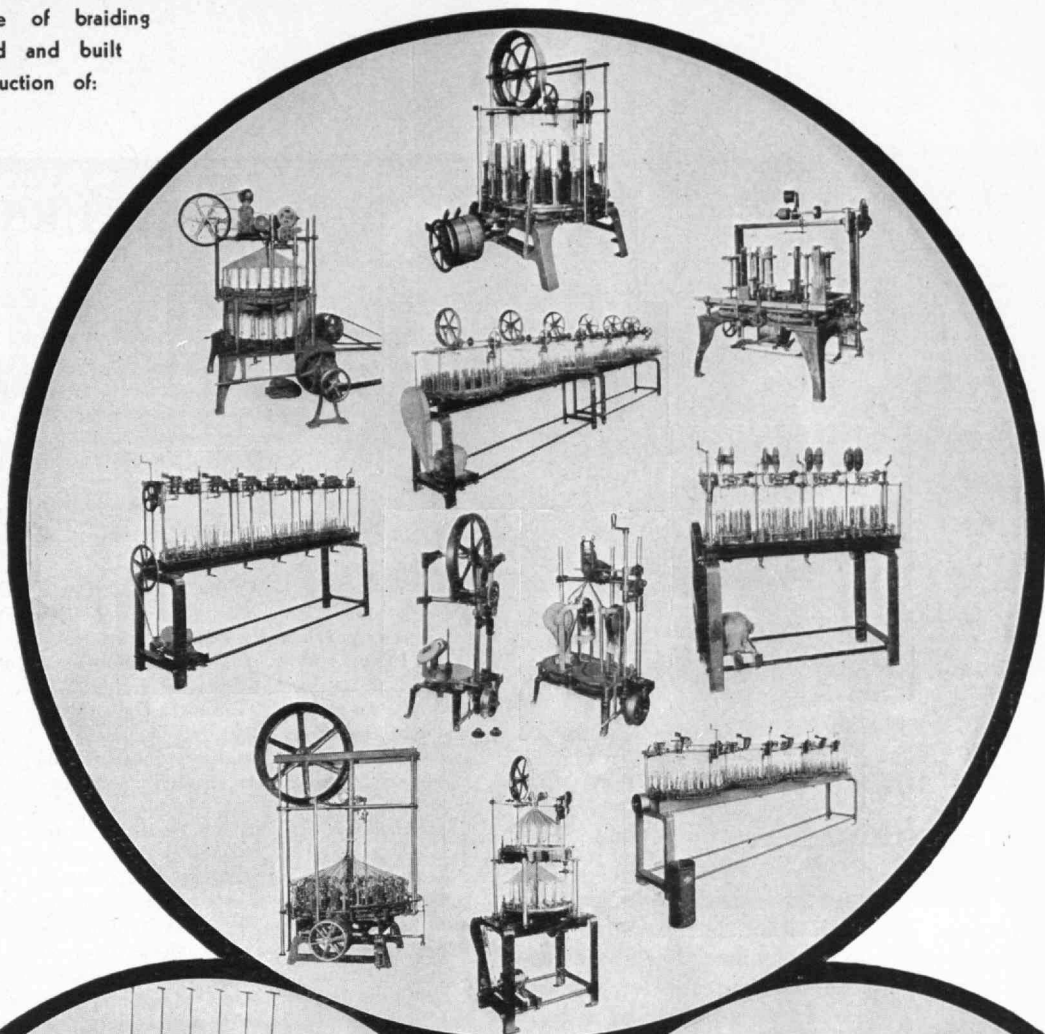
He did not stop there, however. Such a fine old dog deserved a polished job. He also installed a G-E thermostat in Peg's quarters to keep the temperature constant through all kinds of weather. Now while other dogs cower in frosty kennels, she disposes herself in luxury. She wags her thanks to General Electric.

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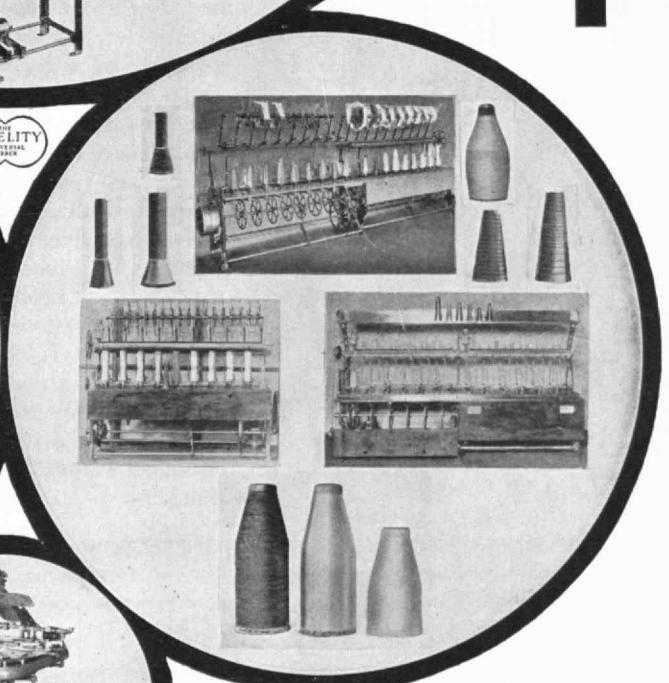
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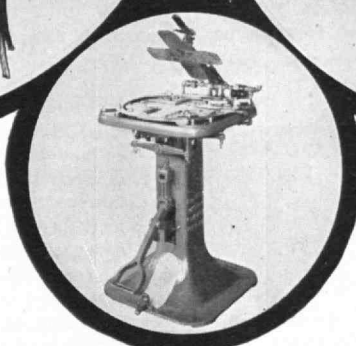
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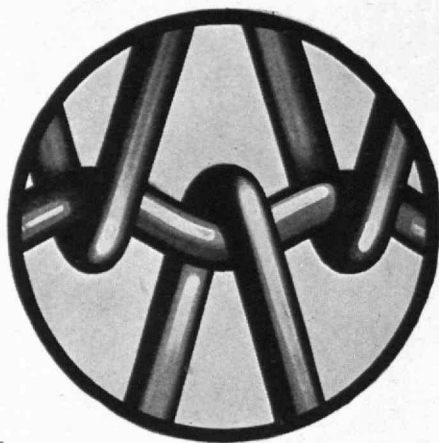
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MAIL RETURNS

Most Constructive

DEAR REVIEW:

In my opinion Dr. Compton's "Put Science to Work" [in The Review for January] is the sanest, most logical, and most constructive contribution toward lessening our present difficulties that has been propounded since the advent of administration experimentation.

GEORGE B. GLIDDEN, '93

Boston, Mass.

Red Herring?

DEAR REVIEW:

I should like to reply briefly to the article, "Limitations of Science," printed in the April number. While I am neither so bold nor so officious as to defend the article on science by Dr. Harvey Cushing, which I have read with interest and close agreement, yet it is well, I think, to point out that Professor Norbert Wiener has busied himself to "draw a red herring" across the trail of the fox — if I may emulate his lavish use of metaphor.

Commenting on the statements beginning on p. 256, lines 1-8, one would say that scientists, especially physicists and chemists, should not "temporarily abandon", but should *moderate their voracity* in, the "investigations dear to their hearts in order" that funds may be available to social scientists for their more valuable studies concerning "the social well-being of the community at large." Certainly the large sums spent in chemical research in explosives, poison gas, tear gas, and those spent in physical, metallurgical, and mechanical research to *improve* armaments and the offensive weapons of war and gangsterdom, could be better used for purposes of social well-being.

It is not a question of *post hoc ergo propter hoc*, as Professor Wiener implies, but a question of the separate integration of the evils that can be attributed to science and of the good that can be so attributed. In the opinion of those whose judgment is unbiased, or uninfluenced by ulterior considerations, the sum of evil far exceeds the sum of good. The concentration of wealth, of the instruments of production, of "power," electrical and other, of systems of transportation and communication, of public utilities — this concentration in the hands of the favored few has arisen through the discoveries of science and their application in technological inventions. The increasing concentration of ownership in natural resources, including agricultural land itself, the enormous increase of unemployment in all classes of labor — all these are due to the discoveries and applications of science. Not that science and invention are the only possible causes; in other places and at other times, other causes have produced like effects. But at the present time it is science and invention that are the *efficient cause*. The *final cause* is profit.

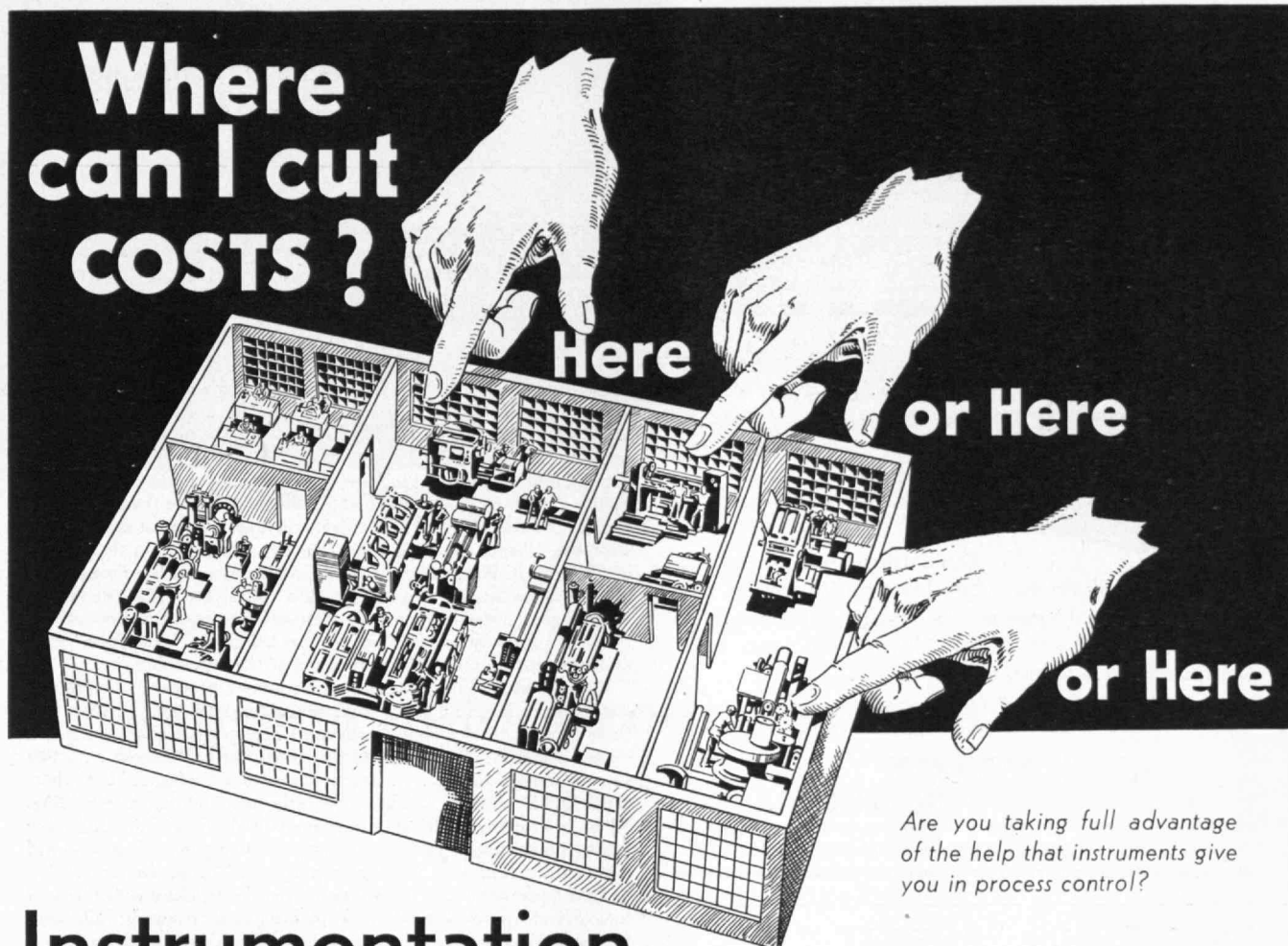
Science and invention like to pretend that there is no such thing as "technological unemployment;" that labor thrown out of one job finds another job, provided by science, awaiting — with a certain lag. Surely a lag that produces ten million unemployed for a series of years, with the accompanying undernourishment and physical, mental, and spiritual degeneration, is as efficacious as Professor Wiener's plague, famine, and war. "Scientific progress" may be said to have created a fifth horseman of the Apocalypse.

No one suggests that scientific progress brings nothing but evil, or that scientific progress is not an essential part of modern civilization. What one says emphatically is that scientific progress must be limited and directed by broader-minded men than most scientists have shown themselves to be, in order that social well-being shall not be destroyed in a civilization (so-called) of "scientific progress."

A favorite device of the proponent of "scientific progress" is to make comparisons of the present with the material circumstances of medieval and ancient times. Why stop there? By going far enough back in man's evolution, any set of conditions can be proved to be relatively good. Moreover, these proponents stress only the comparison of material goods and conditions, for the reason that present-day physical and chemical science seems most concerned with such.

"A hundred years ago," Professor Wiener says, "... the old man and woman did not constitute a great social problem. . . . Their numbers were much smaller" and they had numerous progeny to support them. At the present time — as Professor (Concluded on page 290)

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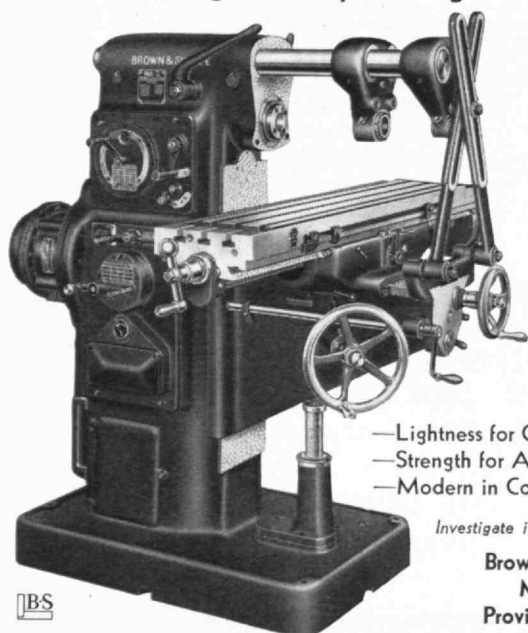
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Investigate its Advantages!

Brown & Sharpe
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MAIL RETURNS

(Concluded from page 288)

Wiener does *not* state—the "numerous grandchildren and great-grandchildren" cannot support themselves. He does not state that, industrially, a man is now old at 40. Indeed, the whole of the first paragraph on p. 268 seems a bit confusing. There are too many old men and women (over 40 years), some ten million unemployed, and still not enough labor to work the "old New England farm . . . in the old New England manner." (Rather a nice title for a popular song.) So science and engineering must come to the rescue of society by a "change in industrial and agricultural technique" that will throw more men out of employment! And he places upon both "medicine and engineering," or science, "the responsibility for the fact that the present state is not one of equilibrium." Medicine is to *blame* for prolonging and ameliorating the life of man, and engineering science, apparently, for throwing men out of employment and making them old before their time! But this is rank scientific and industrial heresy, and one must suspect that Professor Wiener's real meaning is hidden somewhere in the Garden of Eden, or in Pandora's box. Truly, as he says, neither Prometheus nor the "boy scout" can extinguish a "little fire" like ten million unemployed; not even by a gush of Omar Khayyam. But Prometheus (science?) and boy scout (industry?) are helping to "extinguish" men and women over 60 by their invention of the automobile.

No one, so far as the present writer knows, proposes to withdraw "scholars in large numbers from the natural sciences . . . putting them to work in sociological sciences." The scientist doubtless would—and sometimes does—modestly, undertake to "remold . . . this sorry scheme of things . . . nearer to (*his*) heart's desire," but others think he has already, and incompetently, done too much remolding. What is proposed is to withdraw funds and opportunity from the futile "indirections" of science and bestow them upon those who will use them for humane, and higher purposes. This is the more to be desired because of the "long-range" complexities and difficulties of sociological, psychological, and philosophical research; although Professor Wiener cites these long-range difficulties as a reason for *not* exploring the "unknown wastes" of sociology. At some length he would seem to reason thus:

(a) The "methods of modern science," *i.e.*, of physics, chemistry, and mathematics, are the only logical methods of investigation.

(b) Those methods are not applicable to sociology, nor to humane studies in general.

(c) Therefore the "scientist" should not pursue investigations in sociology, and so on.

With this conclusion one is in complete agreement, but one may, at the same time, not accept the first hypothesis. And when the further corollary is drawn that the natural scientist should be permitted and encouraged to continue his investigations, his researches, at the expense of sociology and humane studies in general, then one claims a *non sequitur*. The question of values arises.

Doubtless Professor Wiener knows that no one wishes scientists to lead a sociological trek; he knows that there has been an increasing desire that they "stay in their own back yard"; a desire which he shares. But he wants them to remain there with a generous supply of balls and tops and other playthings. To accomplish this end he has fought valiantly a ten round bout of—shadow boxing.

L. MAGRUDER PASSANO

M. I. T.

Kudos for Cohen

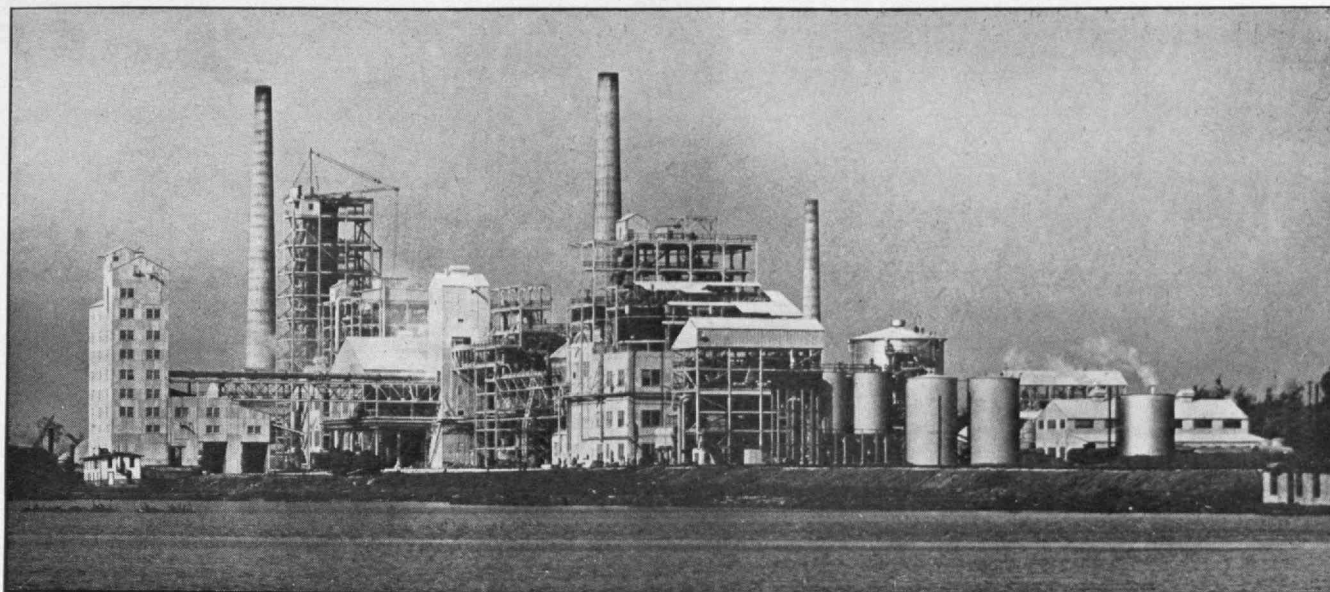
DEAR REVIEW:

Your article on scrap in the April issue is one of the fairest and best discussions on some of our problems that I have seen. I intend to make a photostatic copy of your article and send several hundred to members of the Institute and others who may be interested.

Could you arrange to send me about a half-dozen extra copies of The Review? I would like to send them immediately to some important factors in our industry, before they receive the reprint of your article.

BENJAMIN SCHWARTZ

INSTITUTE OF SCRAP IRON AND STEEL, INC.



NEW PLANT OF THE MATHIESON ALKALI WORKS INC. AT LAKE CHARLES, LA.

Swinging into Production in 1935

REGULAR SHIPMENTS of alkali were started by the new Lake Charles plant of The Mathieson Alkali Works Inc. on February 1st, marking the successful completion of one of the largest industrial undertakings of recent years. The plant represents an outlay of approximately \$7,500,000 and involved construction problems of unusual complexity.

The plant was built by Stone & Webster Engineering Corporation which brought to the job a technical knowledge and construction experience gained from many years of activity in widely diversified fields. Participation in this project is representative of the assistance which the organization is able to render to corporations seeking to lower unit costs or otherwise improve their competitive position through plant modernization or construction of additional facilities.



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Bespoke quality, and look the part

Increase salability of a product

Smooth Forgings polish and plate better

WRITE OUR ENGINEERING DEPARTMENT, —
SEND BLUE PRINTS, — WE WILL OFFER SUG-
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BENDING MOMENTS

For those Who Like Conundrums

SO MANY readers of this fireside journal became excited over the conundrums presented by Phillip Rulon in the February Review that the Quidnuncs hasten to present here the latest brain teaser that is going the rounds of academic circles: An employer had three applicants for a position he wished filled, all of whom seemed equally desirable. In order to resolve this rare quandary, he hit upon this arbitrary device:

He told the three men that he was going to put either a *red* or a *blue* mark on the forehead of each and then bring them together. The candidate who saw a *red* mark on the forehead of either of his competitors was to raise his hand and keep it up until he deduced what colored mark was on his own forehead. The first man to make the correct deduction was to get the job. With these instructions carefully explained to the applicants, he segregated them and one after the other placed *red* marks on the foreheads of all three. He then brought them together and, of course, all three immediately raised their hands. After an interval of obvious puzzlement and severe cogitation, one finally dropped his hand to indicate that he knew what color was on his own forehead. His solution was correct; how did he arrive at it?

Making an Honest Word of Streamlining

NOW that the word *streamline* in all its various forms has made its formal appearance in the 1935 Webster, we hope, but hardly expect, to see progress in its correct use. The usual individual, absorbed in depression and New Deal talk, with now and then a dash of war talk, is not overly concerned with the misuse of this wonderful new word of seemingly universal application. There are, however, those of scientific and catholic tastes to whom, for one reason or the other, the abuse of any word will bring them rushing to its defense. And rightly so, for to the accurate mind of the scientist, this careless bandying about of honest, well-meaning words savors of degradation. In an effort to dramatize products which in themselves frequently lack dramatic power, the magic of the word *streamline* is being thus carelessly employed:

A cigarette advertisement shows two engineers contemplating with much seriousness a 50,000 watt *streamline* radio transmitter!

Reads a local paper: "Improvements on the Culbertson system of bidding at contract bridge, 'built for speed and safety and *streamlined* to resist the winds of chance,' were announced today." (We hear that Sims has retaliated with an *air-flow* system.)

In a business magazine, an article on "Designing to Sell" lists various articles in which *streamlining* is the selling feature; among them, a cocktail shaker, and an ordinary motor cycle, decorated with a few darts and arrows contributing that scientific "It" — alias *streamline* effect.

Then there is a bakelite telephone hand set, whose chief claim to fame is its *streamline* beauty, and a steam shovel, of all things, that boasts *streamline* performance.

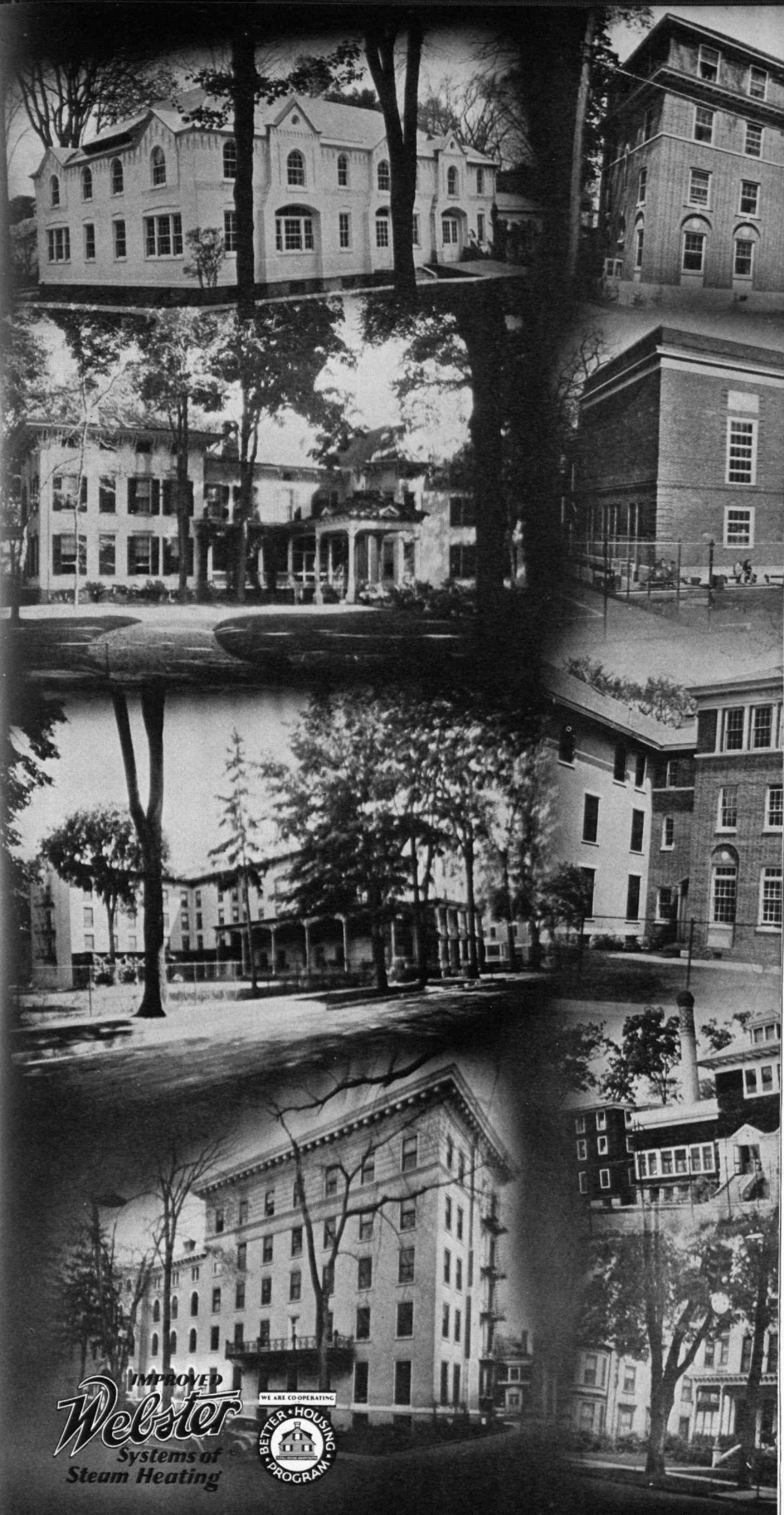
And a modern refrigerator with a new *streamline* body.

An extra truthful advertisement gets by with an automobile which has a *streamline* appearance. (This shows a disposition to be truthful at all costs, though an agile mind can quickly translate this *à la mode*, and again the word scores a triumph.)

This is by no means a complete listing; merely the result of the casual leafing of two magazines and ordinary day-by-day observance, which is no kind of research at all. Whether we like to admit it or not, it seems that *streamline* is destined to take its place with the word *super* in our commercial vocabulary.

If calling things by a name would do the trick, we should like to place an order for a *streamline* salesman (who would get to the point with no waste of time and energy) and *streamline* pencils (for fast writing and stenographic use). Our imagination aroused, we are hourly expecting to see the man whose consumption of razor blades does not satisfy the manufacturers of such products placed by advertising copy writers in the horribly embarrassing predicament of lacking that *streamline* effect so necessary to love and masculine charm.

THE QUIDNUNCs



SKIDMORE COLLEGE CUTS FUEL BUDGET BY MODERNIZATION

Diverse Needs of 19 Campus
Buildings Met by Webster
Moderator System

PROVIDES CENTRAL CONTROL

Slash Yearly Heating Bill Average of 21½ P. C. as New
Program Pays For Itself

ASSURES STUDENT COMFORT

Saratoga Springs, N. Y.—Nineteen Skidmore College buildings, controlled as regards heating from one central point, are burning approximately 22 per cent less fuel every month as the result of a Webster heating modernization program carried out during the fall of 1933.

In less than two years, this institution has slashed its heating budget nearly \$7,000. At the present rate of savings, the entire cost of modernization will be liquidated in less than four heating seasons.

Webster Moderator Control was the choice of Skidmore College officials because of its adequacy in meeting the diverse heating needs of lecture rooms, dormitories, reading rooms, science laboratories, gymnasium and swimming pool.

"Perfectly balanced heating was not accomplished over night," Dr. John R. Hobbie, director of buildings and plant, points out. "Warren Webster & Company kept the installation under careful observation until all engineering difficulties were corrected and the system was operating at maximum efficiency.

"Despite the handicap of unusually severe weather, steam savings during the first complete heating season totaled 7,679,000 lbs. For the first 5 months of the 1934-35 season, we saved 5,943,000 lbs."

Savings are computed on the difference between the current monthly steam cost and past monthly steam consumption over a three-year period, after correction for degree day differences. The operating schedule provides approximately 15 hours of heating service daily for average winter weather.

Sharply reduced incomes have lately forced most educational institutions to abandon long-term borrowing in favor of pay-as-you-go programs. The fact that heating modernization is more likely to be self-liquidating than any other building improvement has stimulated activity in this field.

"In addition," observes Dr. Hobbie, "the elimination of discomforts and distractions is an important contribution to the health and comfort of faculty and students."

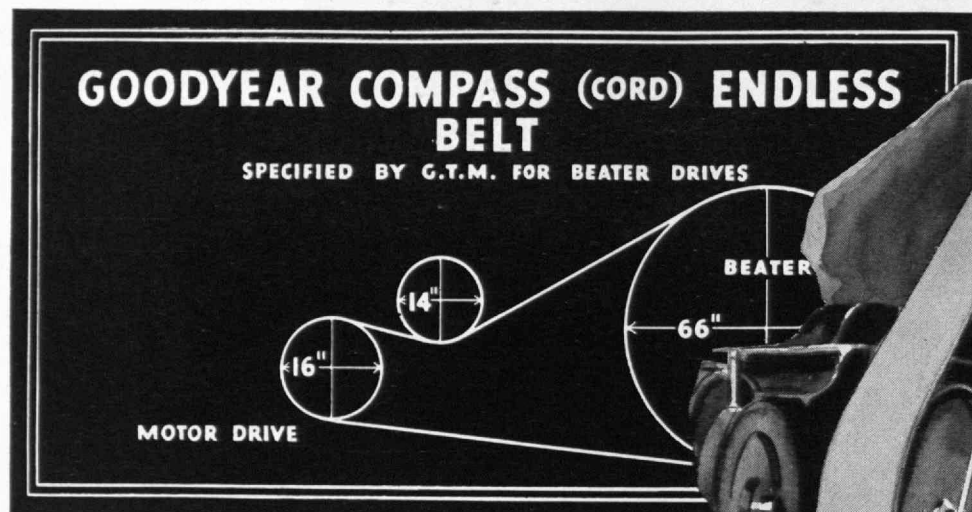
Wm. P. Tarrant, who acted as modernization heating contractor, substantiated these performance facts, saying: "Provided the central controls are adequate, institutional groups can effect large savings by heating modernization."

If you are interested in (1) improved heating service and (2) lower heating cost in your building, address
WARREN WEBSTER & CO., Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Branches in 60 principal U. S. Cities—Estab. 1888

IMPROVED
Webster
Systems of
Steam Heating



IN ONE YEAR HE CUT THEIR BELTING BILL IN HALF



Typical example of savings effected by G.T.M. Analysis Plan

PRIOR to 1933 a leading manufacturer of paper containers was plagued with belt trouble. On some drives belts were giving only a few weeks' service; six months was exceptional on others.

Then the G. T. M.—Goodyear Technical Man—entered the picture. This practical expert made a detailed study of operating conditions—analyzed every drive—and finally recommended a complete belting program.

Here are the records of some of the severest drives in the plant since the adoption of the G. T. M. plan.

Not one service failure

Hot Air Fan on paper machine.
A difficult high speed drive,

exposed to extreme heat. Best previous belt gave six weeks' service. G. T. M.-specified Goodyear COMPASS Belt has given 2 years' continuous service—and the motor has never been taken up!

Helper Drive on paper machine.
Adverse heat and water conditions. Previous belts lasted 5 to 6 months. Goodyear COMPASS Belt still going strong after full year's service.

Agitator Drive. Previous belts broke down every three weeks. Goodyear COMPASS has given 18 months' trouble-free service.

Whipper Drive—runs in water continuously. Former belts lasted 3 days to a week. Goodyear COMPASS in service 18 months.

Production UP—Costs DOWN

As a result of this exceptional service, the company reports that although their production was greater, their belting costs were reduced 50% the first year under the G. T. M. plan.

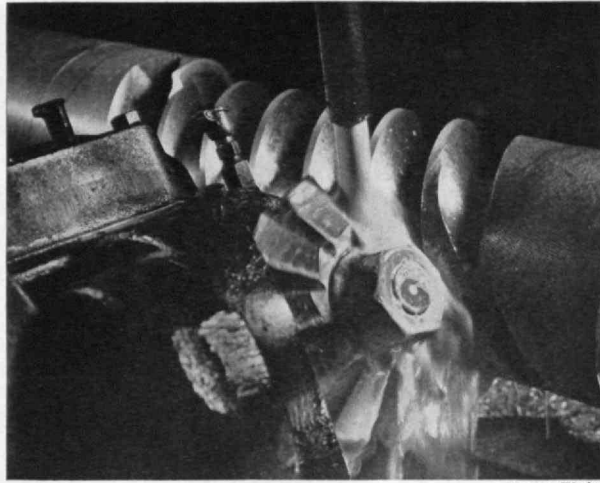
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THE TECHNOLOGY REVIEW

Title Reg. U. S. Pat. Office

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

VOL. 37, NO. 8

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MAY, 1935

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THE TECHNOLOGY REVIEW

Vol. 37, No. 8



May, 1935

The Trend of Affairs

Soft Soap for Hard Water

A NEW sort of soap which works perfectly well with hard water has recently become available. It represents an ingenious application of simple chemical reasoning, and supplies an example of that scientific method which, applied to fundamental problems, leads often to results of the greatest importance.

From time immemorial, alkaline substances have been used for their detergent action. It is characteristic of them that they have a soapy feeling between moist fingers. Wood ashes contain potassium carbonate and were used by the ancients for washing the body and for washing and bleaching cloth and other materials. For removing superfluous hair the Romans used pomades and salves composed of the lye procured from wood ashes and of fat, ground together intimately. Soap itself, however, seems to have been an invention of the north Europeans, of the Gauls or of the Germans, who treated the lye from wood ashes with lime and then combined the resulting caustic alkali with fat, probably by heating or by boiling the materials together. Soap is made nowadays by boiling an animal or a vegetable fat with a solution of caustic soda; glycerine is liberated from the fat and remains in the solution, while the fatty acids combine with the

alkali to form the soap, which floats upon the liquid and is removed, dried, made into cakes, and so on.

Soap dissolves in water to yield an alkaline solution, and alkalies are detergent — but this is only a small part of the story of the action of soap. The solution also contains the free fatty acids, long molecules of 14, 16, or 18

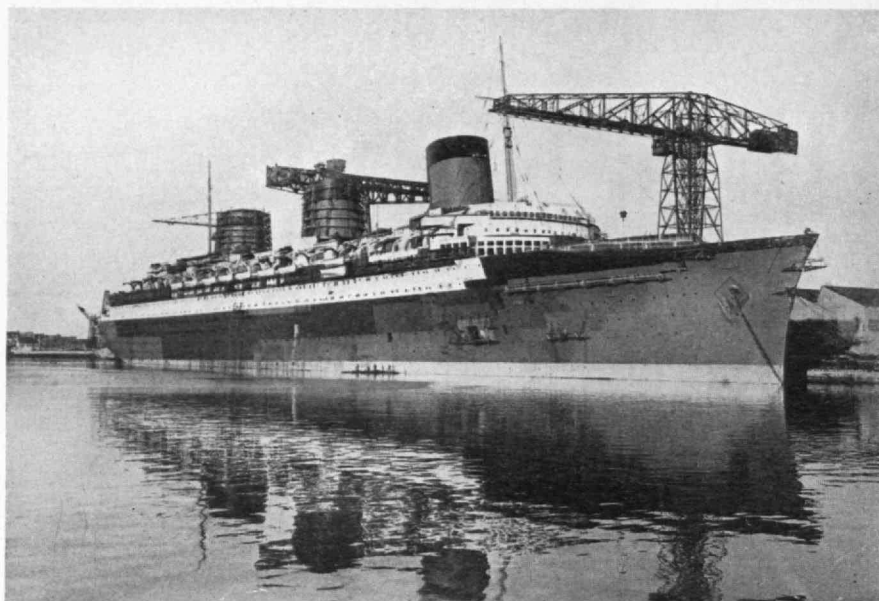
carbon atoms. One end of the molecule carries the acid group, which is soluble in water and makes the whole molecule soluble. The other end of the molecule has more the character of a hydrocarbon; it will dissolve in a fat or an oil more readily than it will dissolve in water — and that is precisely what it does do if the solution is brought into contact with such substances. A water solution of soap forms an emulsion with fats and oils and removes them nicely from hands and clothes in the form of lather.

Ordinary soaps do not form suds with hard water. The calcium and magnesium salts in the hard water interact with the fatty acids to form insoluble substances, the molecules of fatty acid are removed from the liquid which no longer has any detergent action and will not froth and foam when agitated. It is an interesting experiment to shake a quantity of soap solution in a bottle filled with suds. Then add soluble calcium or magnesium salt, a little Epsom salt for example; the suds disappear and cannot be reproduced by further shaking.

BAEDEKER

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Acme

The giant French liner, Normandie, scheduled to begin a four-day transatlantic service early in June. She is of about 79,200 tons gross, her overall length is 1,027 feet (9 feet more than the Queen Mary), her height from keel to navigating bridge, 128 feet. Question: Can a liner of this size ever be operated profitably?

They react with sulphuric acid to form soluble acids which form soluble salts with calcium and magnesium. The sodium salts of these acids are excellent soaps for use with hard water, or, for that matter, with water of any kind. They are something new under the sun, soaps which differ from the soaps which have been in use for 2,000 years, in not being salts of the fatty acids. They are a pretty application of the theories relative to the detergent action of soap solutions.

In order that soap may be a successful detergent, it must be such that its solution contains molecules which are soluble both in water and in fats and oils. The long-chain fatty acids fulfill the requirement. But the problem of making a hard-water soap is to find acids, soluble in water and having the character of hydrocarbons, which do not form insoluble salts with calcium and magnesium.

Sulphuric acid forms sparingly soluble salts with calcium and related elements, but the product of the combination of sulphuric acid with alcohol is ethylsulphuric acid, which forms soluble salts with the same elements. In the commercial process for the hydrogenation of liquid oils, like cotton-seed and corn oil, to convert them into solid and edible fats, if the pressure or the temperature is allowed to rise too high, some of the fatty acids of the oils are converted into alcohols which are obtained as by-products. These alcohols of 14, 16, and 18 carbon atoms naturally possess characteristics of hydrocarbons, but they also have the chemical reactions of alcohols.

Vindictive Caisson

EVEN before Victor Hugo popularized the motif with his vivid description of the loose carronade on the corvette, *Claymore*, the subject of man's inanimate creations turned animate and vindictive fascinated writers of fiction. It remains popular to the present day.

Recently the world of fact supplied a riposte to this world of fancy when a caisson for the Golden Gate Bridge went berserk. This huge confection of wood and concrete, 90 feet by 180 feet, with 400 cubic yards of concrete aboard, lay for months last year obstreperously pulling at its mooring ropes till all was prepared at its final destination, the south pier of the bridge. On October 9 it was towed into place with considerable difficulty and there behaved so badly that engineers finally gave up in disgust and ordered it removed. While being towed away, it showed its malice by gleefully crashing a pier of the rival bridge running from San Francisco across the bay to the city of Oakland.

Foundation programs, subsequently altered, made the caisson unnecessary, and it was decided to sink it. On March 4, escorted by two tugs, it was towed out the Golden Gate. But the caisson was even more recalcitrant than before. After a 12-hour struggle, the net progress was five miles from shore. Came the dark and an extra-powerful wave, and the caisson broke from towing cables and



American Architect

While Englishman John Clough, able critic and essayist on matters architectural, bemoans the passing of a magnificent opportunity in the progressive classicism of our national capital, Paul Phillipe Cret makes his protest in stone instead of words with a truly beautiful, genuinely modern, and organic solution of the central heating plant in Washington

sailed away on its own, loaded, be it said, with dynamite meant for its destruction but now a menace to all shipping in the vicinity. Headline writers leaped to their tasks. Next morning a flock of tugs with ropes corralled this latest creation of Frankenstein and gently lured it 30 miles to sea. Whereupon, the dynamite was at last detonated, and the caisson bid the world of humans adieu. The tugboat captain, interviewed on behalf of our usually sober contemporary, *Engineering News-Record*, reported: "Dam box, she go boom, sink."

Shoes for Sherpas

MOUNTAINEERING expeditions to the very highest levels are unlikely to produce much of interest in the way of scientific observation. The climbers are entirely too occupied with lugging their own carcasses to be burdened with the apparatus necessary for observations of value; and their mental condition, often subject to hallucination, is not such as to render their observations free from suspicion of inaccuracy. Thus, when F. S. Smythe, who was a member of the recent Rutledge-headed, all-British effort on Everest, solo-climbed as high as, if not higher than, any man has been known to have gone, he managed to see two strange, bird-like objects hovering over the summit of the mountain some 1,000 feet above.

The latest of the Everest expeditions, in view of Tibetan superstition prodded by the natural disasters following that party, may be the last for some time. None the less, in spite of illusions and unreasoning fears, from such expeditions often come stray gleanings indicating the advance of science, even though the positive facts to be recorded are slight. In his just published account of the 1933 assault,* Mr. Rutledge reported that from the camp at the base of Mount Everest, across miles of waste space and static-infested, mountainous heights, wireless telephony was carried on with Darjeeling, and that all but the extreme upper camps were in communication by wireless with the base. Medical implications were equally clear. This was the first party that had been carefully acclimated en route to the summit and, unlike previous parties, the members of this one suffered little loss of appetite or enervation, even at altitudes of over 27,000 feet.

Perhaps the most interesting practical fact that comes from the thrilling description is, however, the account of shoe design required by the difficulties of the exploit. Previously, almost all men who had reached heights on Everest had suffered from frostbite on toes or soles.

* Rutledge, Hugh, "Attack on Everest." New York, Robert B. McBride and Company, 1935.

Here, fertile English minds proved equal to the task by inventing a boot of two layers of leather with an intervening ply of asbestos. Contact with metal was avoided by driving the nails only through the lower layer and turning them over. The inner side of the boot was lined with a thickness of felt. For use around camp an even more complicated affair was devised. This had insulated composition soles and uppers, lined with sheepskin, reaching to the knee. The porters, who for once on a climbing expedition were free from rebuke, were furnished with a boot similar to that of the climbers but somewhat heavier. These, Mr. Rutledge said, were so popular with the Sherpas and Bhutias who carried the loads that he attributed much of their faithfulness to the hope that somehow they might win the boots for their very own after the turmoil was over. We have



Water from the Owyhee River in the eastern Oregon project of the U. S. Bureau of Reclamation is carried across numerous canyons by giant siphons over ten feet in diameter. Above is the Sniveley siphon over 900 feet long and completely arc welded throughout its length

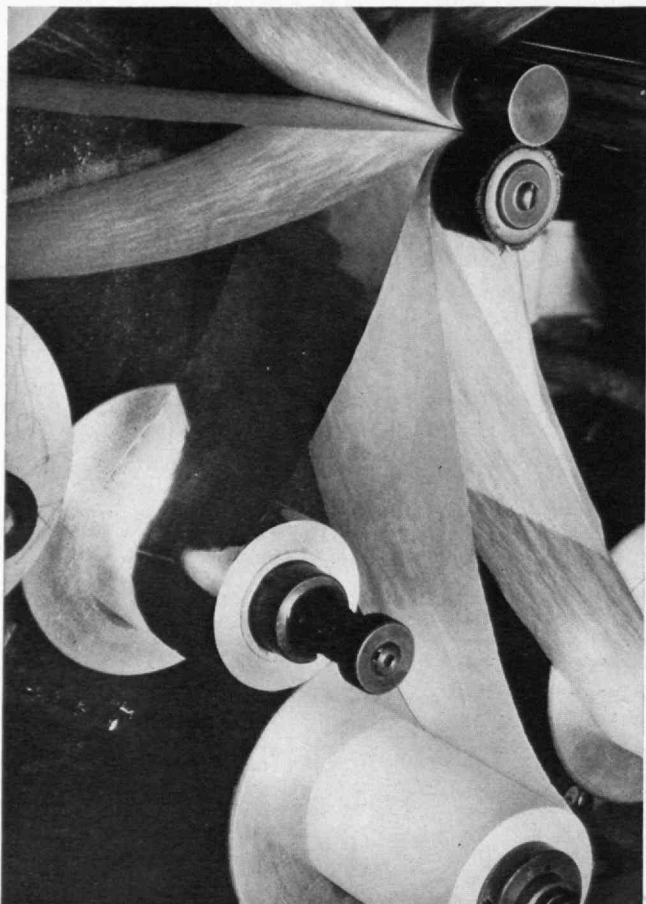
Science Service

learned that natives who cannot understand the vague aspirations, almost religious, that lead white men into such affairs as the conquest of Everest can be urged into similar exploits by the promise of a bit of footwear.

Polls to Poles

NO LESS formidable contemporary than *Isis*, the quarterly organ of the History of Science Society, has revived the ancient and honorable superstition of the value of longitudinal sleeping. In a recent issue its editor, George Sarton, reprinted a series of communications on this subject from the *London Times*.

The theory, first repropounded in "The Thunderer" by one Arthur Lovell, holds that a sure cure for insomnia is for the sufferer to sleep with his head north and his



Margaret Bourke-White

Winding radio condenser coils

feet south, thus counteracting whatever unsoporific effects may be engendered by terrestrial magnetism. This theory was advanced, perhaps for the first time, by a German chemist and philosopher, who went by the name of Karl Freiheer Reichenbach. Believing he had discovered a terrestrial fluid to explain hypnotism, he deluged the late Eighteenth and early Nineteenth Centuries with communications under such resounding titles as *Physikalische-physiologische Untersuchungen über die Dynamide des Magnetismus usw. in ihren Beziehungen zur Lebenskraft* (Braunzweig, 2 volumes).

The Lovell letter immediately caused a flurry of excitement. Mr. Unnithan wrote to say that the ancient Hindus held exactly opposite views. Mr. Paget of London, on the contrary, reported that Chinese and Indian peasants always slept with heads to north when possible. Mr. Akegurst of Cornwall gave personal observations, but stated that the head could be either north or south. Mr. Langston of Maidenhead reminded readers that Charles Dickens was a north-and-south sleeper. Many readers followed with individual observations so that the correspondence took on the atmosphere of an experience meeting. Finally, Dr. Barton of Gloucester, apparently a psychiatrist, voiced the views of any intelligent layman that if the belief made people think they would sleep better, they probably would sleep better, as many forms of insomnia are psychological. Dr. Barton added the warning note, however, that by giving in to this hypothesis, the patient courted sleeplessness on such occasions when circumstances forbade heads to the pole.

Dr. Sarton's interest is, of course, chiefly historical. He wonders if in earlier sources may be found the roots of the Reichenbach hypothesis. Review readers may be entertained by this additional exhibition of the intricacies of the British mind which finds equal fascination in heads to the pole and in the lack of bends in whales (Review, March, p. 212). Perhaps it is that very preoccupation with what appears to others to be trivial that has made Britain what she is.

Novelty Counter

BOON-DOGGING, the term for useless gadget-making, is quite inapplicable to all but a few of the products gathered by us into the following list after much arduous shopping. Furthermore, it's well-nigh impossible to tell when a boon-doggie is going to be a boon to many, a fact vividly emphasized to us by the number of people who expressed serious interest in the Quidnunc's list of amusing patents in the April Review.

From non-stop razors to golf balls filled with honey, our collection of new products includes items important and unimportant, useless (but entertaining) and highly useful:

¶ The rubber technologist has scratched his head and kneaded his dough with excellent results. Witness the pleasing "streamline" hot-water bottle with a skin that is soft and caressing to cold feet.

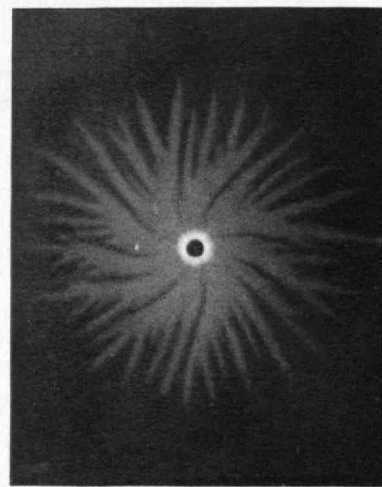
¶ An English company has developed a rubber and fabric raincoat which eliminates condensation by using a loosely woven textile under the rubber.

¶ Millions will sigh with relief to learn that the horror of skidding in the bath tub has been banished by the invention of a rubber pad fitted with tiny rubber suction cups that cling to the slippery bottom. While no one has announced a non-skid soap for those who have a habit of stepping on the cleansing cake, the sandy kind that comes in cans is recommended.

¶ A new method of treating silk with rubber, producing a rubberized fabric, proof against sun, oil, and peeling, long-lived and odorless, is claimed by still another company. The possibilities for non-smelling raincoats, sheetings, shower-bath curtains, and tobacco pouches are suggested.

¶ An all-rubber lamp, highly polished and guaranteed not to scratch the finest table top, has appeared in England.

¶ The attention of the neighbor who trundles a noisy wheelbarrow about his garden early Sunday morning may be directed to the new pneumatic tire for wheelbarrows. This rubber blessing has special uses for construction work on roofs and may be used safely on the lawn.



C. E. Magnusson

Electrical discharge on a photographic plate in a magnetic field. Klydonograph studies of these whirligigs or

¶ For the children, there is a new flexible rubber seat for swings. Advantages claimed: safer, splinterless, and more comfortable where comfort counts.

¶ Anyone who has wrestled with a broken tire chain will find new hope for salvation in a snow and mud tire with a tread deeply indented with a design that is claimed to improve traction.

¶ The housewife standing over an ironing board will, no doubt, realize the possibilities of a fatigue-proof, flexible, rubber handle for irons. As the fly fishermen say: "It's all in the wrist."

¶ Another development is a rubber putty which has the familiar color, but is said to be superior to the old standby of linseed oil and whiting for all purposes where putty is indicated. Resists moisture, acids, and sun.

¶ Tree surgeons are offered a new rubber compound for filling cavities and treating wounds on injured trees. It's black, flexible, and weatherproof, say its makers.

¶ The curiosity aroused in the first paragraph anent golf balls filled with honey is here satisfied. The high specific gravity of honey makes it adaptable for use in the center of golf balls without additional weighting. The fact that it does not evaporate is another advantage. Such balls are on the market.

¶ Another golf ball has an icy heart, for it dawned on one manufacturer that a tiny pellet of solid carbon dioxide (dry ice, to the non-technical) sealed in the center of the ball would revert to its originally gaseous state. The resulting expansion is said to produce a ball of "great resilience and accurate sphericity."

¶ For those with small babies, there is the new rubber bottle nipple which screws on the top with the twist of even an awkward father's wrist.

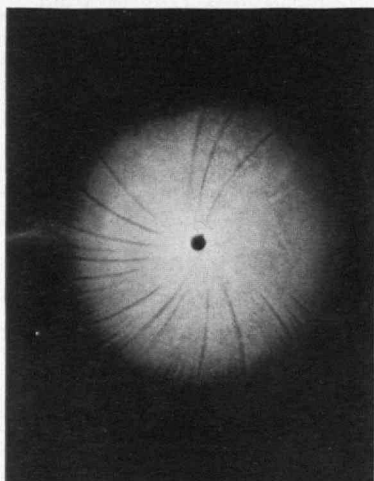
¶ Before the chapter on rubber ends, be it known that a German humanitarian has developed a rubber number tag for hotel-room keys. Anyone who has had his slumbers disturbed by the clinking of metal tags against parent keys and doorknobs will join the chorus of gratitude.

¶ Springing from rubber to Vermont, one finds a new process for making a beverage of unquestionable alcoholic content from maple syrup. The prospect of obtaining sweet oblivion from the hard maple tree has

caused an early welcome to spring in the maple groves of the Green Mountain state.

¶ Orange-colored cement is being used in England on experimental sections of highways in the belief that the color will reduce the glare of sunlight and headlights.

¶ Japan claims development of aluminum which is as hard as steel, and resistant to corrosion from salt and acids. Her faith in the metal, which is hardened by a secret process



Lichtenberg figures supply useful information to electrical engineers on the nature of the electric spark



F. S. Lincoln '22

New penguin pond at London Zoo designed by B. Lubethkin. The ramps are of reinforced concrete

involving immersion in oxalic acid, is indicated by the fact that it is being used for military helmets (sounds dangerous to us), as well as pots and pans. Any successful method of hardening aluminum would be one of the most important developments in modern metallurgy.

¶ Turning to Germany again, the appetite is whetted by news that homes in certain sections of Berlin are being supplied with hot meals of pleasing variety by means of pneumatic tubes from central kitchens. The victuals are stowed in thermos cylinders and shot hither and yon by compressed air.

¶ Textile manufacturers exhibited several new products at the recent British Industries Fair which are worthy of study. One is a fabric produced by a finishing process that eliminates starching. The full significance of such an invention is apparent in the condition of the conventional starched shirts on a moist day in July. The material may be used for sheets, trousers, and many other articles.

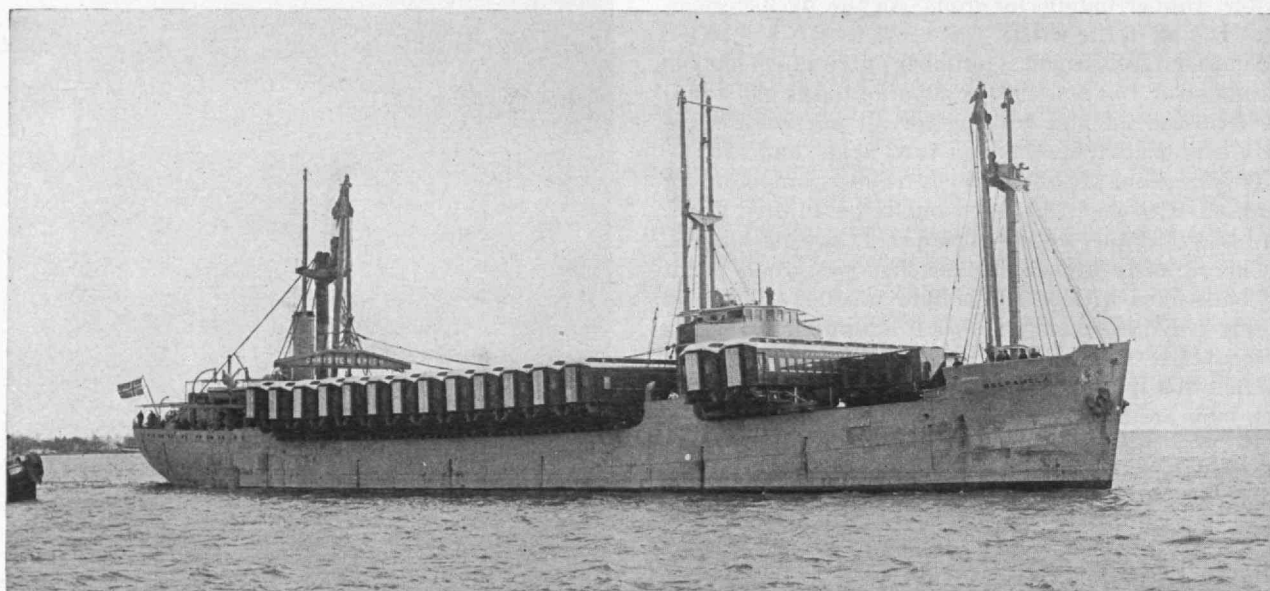
¶ Another manufacturer, who possibly has visited New England in April, has produced a cross between a sheet and a blanket. It has a peculiar raised surface and is light but warm.

¶ From Sheffield, the world's most prolific source of knives and forks, comes a non-stop razor, a weapon with a blade of ribbon steel which unwinds a new and sharp section at a twist of the wrist. Any bristling beard that learns that this razor blade is 57 inches long is sure to wilt into soapy surrender.

¶ The day when the amateur can make photographs in natural colors is brought a step nearer by advances in the Dufay color process, which was developed in England. This method, while by no means new, consists of printing colored lines on a photographic emulsion in a crisscross arrangement. The lines are red, blue, and green. Thus the filter usually employed on the lens for such processes is actually incorporated in the film. Improvements in the emulsion have reduced the exposure

bonded plywoods of the Haskelite type have seemed free from the defects of those bonded with ordinary glues, but cost has restricted their field of use. Now, promises of lowered expense open up new vistas.

The announcement is especially pertinent at a time when the Forest Products Laboratory in Madison is publishing unusual results obtained in structural floors with stressed plywood coverings. Reduced to common terms, the results of this research show that floor joists



Largest American export shipment of railway rolling stock since 1929. Ten locomotives and 15 passenger coaches destined, via M. V. Belpamela, for the Chilean State Railways. Note how the cars extend over the sides of the vessel

Baldwin Locomotives

time considerably and the film is now available in this country for amateur use. The result is a color film which may be projected. It is not possible to make prints by this process, although the films lend themselves to color reproduction in printing.

¶ A new synthetic building material in the form of a brick of light weight, originally developed in Germany, is now being experimented with in this country. The material is essentially a sand-lime brick in which very finely ground sand is used. The sludge, wetter than usual in brick manufacture, is poured into a mold and centrifuged. Entrapped gas gives the brick its lightness and a porosity resulting in a fair thermal coefficient.

More About Wood

IN JANUARY The Review pointed out that wood, one of man's first materials, has managed to adapt itself to changing environments and still contrives to be useful despite many premature obituaries. The latest development comes in the field of plywoods. Experiments in the use of new binders have apparently proved conclusively that it is possible, with various thermosetting compounds of the synthetic-resin type, to produce plywoods of great length and strength, of unusual uniformity, of high resistance to deterioration, and, at last, of reasonable cost.

The implications of this development are clear. Plywood has always been a highly useful material but subject to unexpected and unpredictable failures. The resin-

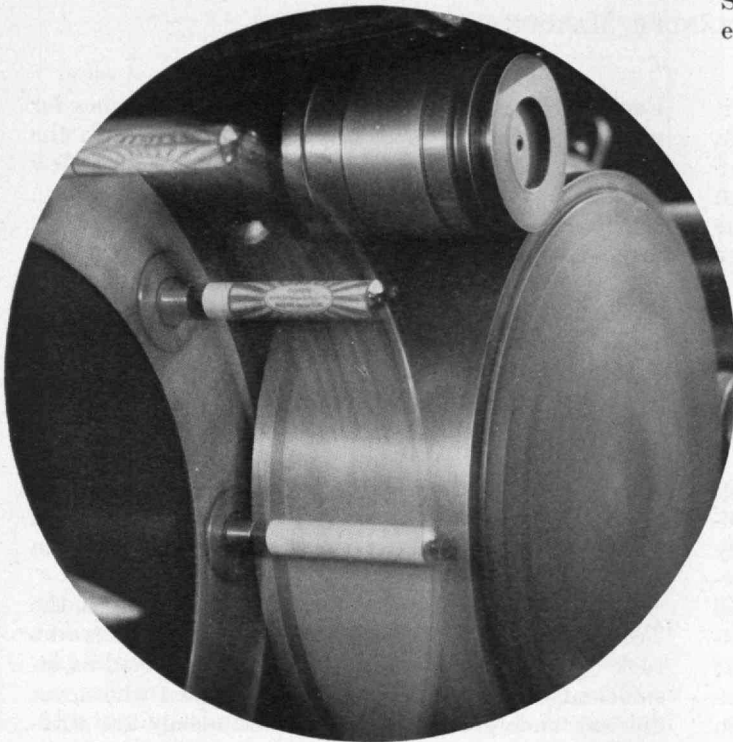
of less than usual depth, spaced at more than usual spacings, will carry ordinary floor loads in comfort, if they are covered, top and bottom, with plywood properly bonded to them throughout their length. The upper plywood plate can conveniently serve as under-flooring; the lower, painted, makes a perfectly adequate ceiling finish. In such a panel there is much of promise for prefabricated buildings of the future as well as definite economy in combination with traditional construction of today.

Meanwhile, on quite another front, reports from Russia indicate that, since 1929, over 200 wood-reinforced-concrete pneumatic caissons, many of great size, have been sunk successfully. The general principles of design are similar to those of steel-reinforced concrete, but the difference between the moduli of elasticity of the two combined materials is slight in the case of wood reinforcement and great in the case of steel. This results in larger areas of wood, to be sure, but probably a more efficient use of the material, stress for stress, than is possible in the case of steel. (Wood has not been found satisfactory for shear reinforcement and steel stirrups are still used.)

Like the interesting wood-panel houses of Stockholm, this use of timber will most likely be of little practical value to engineers in the United States, where timber is not, relatively, so cheap as it is in Scandinavia and Russia, but for an engineer faced with an emergency, it may be stated that the wood should be dry — the drier the better — for bond (due, perhaps, to subsequent

shrinkage if wet) and that the ratio of moduli between pine or fir and concrete may be taken as 1.0 to 1.5. This does not agree with the ordinary American ratio of 0.5.

The prime interest in this caisson design, however, may lie in the fact that Soviet engineers are beginning to think for themselves. The consequences of this implication are scarcely capable of offhand estimate.



Rüttase

Above: Here is how tooth-paste tubes are filled and rounded.
Below: A jungle macaw — the gaudiest denizen of the South American continent

William Lavarre from Gendreau



Reversible Air Conditioning

THE possibility of interesting developments in air-conditioning equipment which will heat buildings in winter and cool them in summer is indicated in the installation of a reversible air-conditioning system in the new building of the Atlantic City Electric Company at Salem, N. J. This is not the first installation of such equipment, for in February, 1933, The Review com-



F. S. Lincoln '22

The decorative fabric on the ceiling of this room in the Hotel Pierre, N. Y., is cellophane

mented on a similar system, then newly installed in the office building of the Southern California Edison Company in Los Angeles.

The new installation at Salem makes use of the reversible-cycle refrigerating unit, familiar to engineers as the heat pump. Reversing the cycle of the ordinary household refrigerator, electrically driven compressors absorb heat from a low-temperature source, raise it to higher temperature by compression of the refrigerant gas, and discharge it at high enough temperature to heat the building efficiently in winter.

The summer process is the reverse, in that heat and moisture are withdrawn from the air of the building, and the heat is raised by the compressor to a high enough temperature to be dissipated outside.

An advance in this latest installation of air-conditioning equipment is that the heat employed in winter is drawn from a well of water which maintains a natural temperature of at least 56° in the coldest weather. Heat is transferred from the water to the refrigerant in a large water cooler. In the compression cycle, the temperature of the refrigerant is raised to 135° and the heat is utilized by passing through a condenser over which air is circulated. For cooling in the summer, the condenser will be used as a cooling surface and will dehumidify the air, the heat thus absorbed being dissipated by the water cooler, which, paradoxically, becomes a water heater. A high-velocity fan and air-conditioning system complete the air-conditioning apparatus.

Scholarship and Distinction

A Study of the Achievement Patterns of Technology Men in Three "Who's Who" Directories

BY F. ALEXANDER MAGOUN

HINDSIGHT is not only better than foresight; it is often the very basis of intelligent foresight. Thus, in considering educational trends, one valuable aid should be a survey of the patterns into which college alumni have woven the warp of college with the woof of later achievement as the shuttle of experience flew back and forth across the beam of time.

In an attempt to acquire data on a sizable group of recognized achievement, it occurred to me that a study of the patterns of all the Technology men listed in "Who's Who in America" (1932), "Who's Who in Engineering" (1931), and "American Men of Science" (1933) might prove illuminating.

There are individuals who, with a twinge of distrust, will challenge such sources as fountainheads of Technology's list of distinguished men, but I think the body of competent opinion will agree that: (1) no other objective method of selection is available; (2) by using all three volumes a representative, although not an exhaustive, list of outstanding men has been secured. It certainly includes not only the engineers and the scientists but also that portion of the men in "Who's Who in America" whose ultimate careers had little relation to their course of study at Technology. An electrical-engineering graduate is now a famous composer; a civil-engineering graduate is now an internationally famous economist; a chemical-engineering graduate is now president of an insurance company; a former student in the Physics Department has become an artist with exhibits in Paris, Rome, London.

Out of the great mass of material assembled, this article will concern itself almost exclusively with achievement patterns as based on scholastic standing. Each man's undergraduate marks were resurrected from the vaults and dusted off; his average grade calculated. (Graduate marks were studied, too, but that is another story.) In order to determine the decile — or tenth of the class — to which these Who's-Whoers belonged, it was obviously necessary to calculate average grades for everybody in the class, so that the boundaries of the deciles might be determined. This was not done for every class from 1868 to 1930, but through the coöperation of the Registrar, the graduating classes of 1885, 1888, 1890, 1893, and so on, to 1910 were calculated and the resulting decile boundaries used in the areas to which they applied. From 1922 to date, the present system in operation in the Registrar's office was available.

By examining each individual biography in the three reference volumes listed, the number of men included who claimed instruction at Technology was found to be: "Who's Who in America," 509; "Who's Who in Engineering," 933; "American Men of Science," 717.

Each of these books contained its quota of names for whom no record of attendance could be found in the Registrar's files: a famous actor, the mayor of a New York State city, the president of a mid-west university, a painter, an author — altogether an astonishingly diverse assemblage. The "no record" * listings totaled: "Who's Who in America," 27; "Who's Who in Engineering," 50; "American Men of Science," 14. One cannot but conclude that even among men who achieve distinction when half full of years, the desire for a college trade-mark is strong.

There are, of course, duplications: 171 names occur in both "Who's Who in America" and "Who's Who in Engineering"; 175 in "Who's Who in America" and "American Men of Science"; 151 in "Who's Who in Engineering" and "American Men of Science"; 98 in all three volumes.

In addition to men for whom there is no record in the Technology vaults, data for those special students who took only one or two courses have been deleted as insufficiently significant. And, of course, men who never did any undergraduate work at Technology are automatically excluded by the limitations of this article.

The little group of 98 whose biographies appear in all three volumes, presumably constitute the *crème de la crème*, and therefore deserve a separate analysis by themselves. Only 7 did no undergraduate work at Technology and do not concern this study. Speaking of the remaining 91, 77 received bachelor's degrees in four years; 5 received bachelor's degrees after five years; 3 earned master's degrees; 2 took the doctor's degree. From other colleges, 12 hold the Bachelor of Arts degree, 6 are Masters of Art, 8 have doctorates, 3 are Masters of Science, 9 are Bachelors of Science, and 7 studied in Europe. Out of the 91, there were 27 who transferred from some other college to Technology (with or without a degree) and 11 who went elsewhere after leaving the Institute. Sixty-nine of them are still in their academic field, 11 are not, 10 are in allied activities, and 1 goes undecided for lack of sufficient information. As to positions, 41 are professors, 25 executives, 17 technical experts, 11 researchers. (The head of a laboratory, for example, was counted both as an executive and a researcher.) The average age at which they were recognized by "Who's Who in America" is 41.0 years, which should be compared to the 42.7 years for the other Technology men here considered. As for extracurricular activity, 16 were in management; the next largest number, 12, were on publications, most of these also from the management group above. Twenty-four were engaged in no extracurricular activity.

* Some of these were found in the Lowell School records.

Imagine, then, the consternation with which we contemplated the gritty realism of the statistics for the entire undergraduate survey when they were assembled. Let us begin with the distribution of men by scholastic deciles.

TABLE I
Distribution by Scholastic Deciles

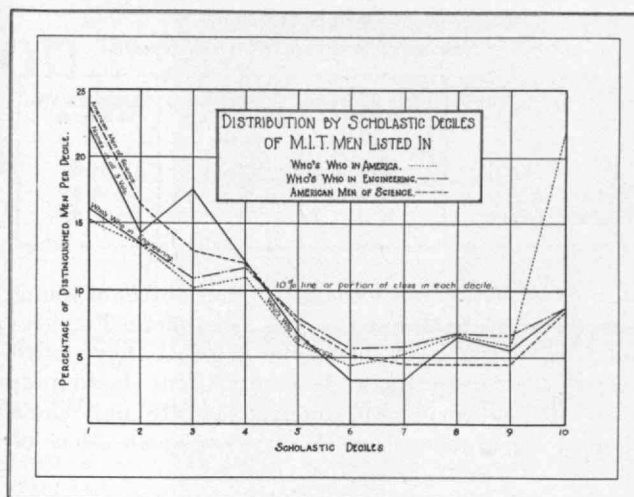
Deciles	"Who's Who in America"		"Who's Who in Engineering"		"American Men of Science"		In all three volumes	
	No.	%	No.	%	No.	%	No.	%
1.....	68	15.3	128	16.1	123	23.8	20	22.0
2.....	60	13.5	108	13.6	85	16.5	13	14.3
3.....	45	10.2	87	10.9	67	13.0	16	17.6
4.....	49	11.1	93	11.7	62	12.0	11	12.1
5.....	26	5.9	63	7.9	39	7.6	6	6.6
6.....	19	4.3	45	5.7	26	5.1	3	3.3
7.....	23	5.2	46	5.8	23	4.5	3	3.3
8.....	30	6.8	54	6.8	23	4.5	6	6.6
9.....	26	5.9	53	6.7	23	4.5	5	5.5
10.....	96	21.8	118	14.8	44	8.5	8	8.8
Totals	442	100.0	795	100.0	515	100.0	91	100.0

By definition, 10% of each class belongs in each decile. If 500 men are catalogued in the order of their scholastic standing, there will be 50 men in each decile. Thus if marks — would that I could say intellectual capacity — were of no significance in one's professional promise, we should find the distinguished graduates equally distributed scholastically; that is, 10% of their total would appear in each decile. That the top fifth of the class far exceeds this equality of division (see Table I), and the fifth to ninth deciles fall greatly below it, is no surprise. But what about that astounding group in the bottom tenth of the class!

In studying the table for the entire group, it is important to remember that this is not based on graduates only, but on everybody who had an undergraduate record of more than three marks. The percentage distribution by deciles of scholastic standing reckoned only for men who received a bachelor's degree and who are found in any one of the volumes is substantially the same as that for the men whose biographies are found in all three volumes. This point should be emphasized. But compare it to the distribution of the entire group and reflect upon the implications thereof!

The dangers of interpreting figures, even where there seems to be shining lucidity, are too familiar for me to risk the thunderbolts by uttering any positive declarations. But the temptation to make two observations is irresistible.

First: the heart-warming reception which this discovery will receive from the so-called "dumb-bells" is obviously unwarranted. The men at the bottom who have achieved distinction did not do so because they were dull; a study of the fifth to ninth deciles makes such a theory untenable. They achieved distinction perhaps because they were unwilling only to study when and as directed; because they took a college course in being editor of *The Tech*, president of a fraternity, chairman of the Institute Committee, as well as a college course in physics and mathematics; because they possessed qualities of judgment and leadership not measured



in college grades; because they were misfits at Technology; or because they were definitely non-conformers, including those special students who studied for content rather than for marks and who, not being interested in degrees, cut their final examinations.

To these suggestions, most educators will lend a willing ear. But a note of impatience; nay, a virulently unresponsive reception will doubtless greet what seems to me the following inescapable companion to the above explanations.

Second: The men in the top deciles succeeded not just because they were bright, but because they also possessed those other qualities which include an understanding of the art of human relations, without which true leadership is impossible. Clarification of focus will, I feel sure, show that the itching skepticism toward students with high marks and *nothing else* expressed to me this very day by an internationally known scientist, has as sound a basis as has distrust of the dullard. This hypothesis is reinforced by the fact that the 20% of the Class of 1934 still unemployed last October had a higher scholastic standing than the employed 80%. Companies do not hire grades, they hire men. A grade is a passionless statistic; a man has personality.

Other things being equal, the man who gets high marks has an unquestioned advantage. The average age at which men in general first appear in "Who's Who in America" is 51 years. For the Technology group under consideration, it is 42.7. The Technology top decile average 42.5 years; the bottom decile, 44.5 years. Eight men in the first three deciles got there before the age of 30. All but two of the seven men elected to "Who's Who" after the age of 65 were in the last three deciles of their classes. ("Who's Who in Engineering" and "American Men of Science" are of too recent origin to make "age of inclusion" meaningful.)

The top decile men get married younger, have more children, and change their jobs fewer times. Not counting military service as a position, the average number of jobs held is shown in Table II.

Promotion from one position to another in the same company is not reckoned as a job change; only when a man severs his connection with one firm to accept a position with another has the change been counted.

On this point, comparison between the volumes is un-

TABLE II
Average Number of Positions Held and Reported

	"Who's Who in America"	"Who's Who in Engineering"	"American Men of Science"
Entire Group	5.4	4.7	3.8
Top Decile	3.4	4.2	3.2
Bottom Decile	4.0	5.1	4.3

fair because of the wide variation in the number of young men whose statistics are as yet incomplete. Furthermore, all of the older men have not told their entire story in their biographies. The most recent class represented in "Who's Who in America" is 1918; in "Who's Who in Engineering", 1925; in "American Men of Science", 1928.

Scholastic standing has astonishingly little effect on whether a man stays in his academic field. The question as to whether a man is in or out of his academic field is difficult to determine accurately on slight information. A graduate architect now devoting himself to etching was reckoned as in a field allied to his academic course; a civil-engineering graduate, now manufacturing cotton, as out of his academic field. If a man left Technology at the end of his freshman year to enter Harvard, took a graduate course in law, and is now practicing before the bar, he was considered to be in his academic field. On the other hand, he who received no degree from Technology after four years of effort and is now occupying a pulpit with distinction was considered as out of his academic field.

TABLE III
Continuance in Academic Field

Academic Field	"Who's Who in America"			"Who's Who in Engineering"			"American Men of Science"		
	Total Group	Top Decile	Bottom Decile	Total Group	Top Decile	Bottom Decile	Total Group	Top Decile	Bottom Decile
Still in	66.2%	67.6%	59.0%	75.0%	75.4%	74.5%	71.0%	67.2%	59.5%
Now out of	20.7	26.5	28.1	14.6	17.5	16.7	17.2	25.4	26.2
In Allied	13.1	5.9	12.9	10.4	7.1	8.8	11.8	7.4	14.3

The distribution of extracurricular activities by deciles is thus far available only for "Who's Who in America" (Table IV) and "Who's Who in Engineering" (Table V). When it is explained that the manager of the Tech Show, for example, has been counted both under dramatics and management and the general manager of *Technique*, both under management and publications, the great significance of being chosen to manage an activity as a promise of later distinction is inescapable.

These tables are probably somewhat inaccurate because of the limitations of the records in early volumes of *Technique*. But though slightly unreliable quantitatively, they are significant as to the distribution of undergraduate extracurricular activity among men who later achieved distinction. Since any one man may be counted three or four times if he is engaged in sufficient activities, the percentages naturally do not add to 100, nor do the totals add horizontally to 442 and 795, respectively.

TABLE IV
Number of "Who's Who in America" Names in Various Extracurricular Activities
Classified by Scholastic Deciles

Decile	Management	Athletics	Publications	Dramatics	Class Officers	Musical Clubs	R.O.T.C.	Social Fraternity	Officer, Student, Professional Soc.	Miscellaneous	Blank
1.	7	5	6	4	4	1	5	16	4	22	31
2.	12	9	7	3	8	6	4	18	6	25	20
3.	9	4	6	2	3	4	4	15	2	19	14
4.	16	7	9	4	9	6	1	16	4	23	15
5.	4	6	4	3	0	2	1	10	4	8	10
6.	5	2	2	1	0	2	1	6	2	8	8
7.	7	2	6	2	3	3	2	7	1	11	6
8.	6	5	4	4	1	3	2	9	4	14	12
9.	4	4	3	0	1	2	3	5	1	10	10
10.	10	8	8	3	4	5	1	34	0	24	52
Totals	80	52	55	26	33	34	24	136	28	164	178
Per cent	18.2	11.8	12.5	5.9	7.5	7.7	5.4	30.8	6.3	37.2	40.4

TABLE V
Number of "Who's Who in Engineering" Names in Various Extracurricular Activities
Classified by Scholastic Deciles

Decile	Management	Athletics	Publications	Dramatics	Class Officers	Musical Clubs	R.O.T.C.	Social Fraternity	Officer, Student, Professional Soc.	Miscellaneous	Blank
1.	17	11	11	4	5	7	4	40	12	52	56
2.	13	20	8	6	5	7	6	38	14	42	34
3.	18	13	11	7	4	4	4	29	8	35	30
4.	40	29	24	12	9	13	7	33	21	77	60
5.	12	11	7	3	1	6	2	28	5	21	20
6.	5	6	5	4	3	5	3	13	7	29	9
7.	10	5	4	2	4	0	3	15	3	21	17
8.	8	13	4	9	1	5	2	14	3	25	21
9.	6	10	3	1	2	3	2	17	6	22	16
10.	14	17	8	7	5	7	0	47	2	29	55
Totals	144	135	85	55	39	57	33	274	81	353	218
Per cent	18.2	14.0	10.7	6.9	14.9	7.2	4.2	34.5	10.2	44.5	27.4

Merely as a matter of interest it may be worth while to present the distribution of Technology's distinguished men by professions (Table VI) and activity (Table VII). Although not here presented by deciles, the figures are still only for men having an undergraduate rating as explained above. Some rather astonishing facts came to light. For example, only one of the 11 naval architects listed in "Who's Who in America" was graduated from Course XIII, whereas there are nine men who studied naval architecture only to achieve distinction in some other field, such as manufacturing, finance, letters, public utilities, aeronautics.

Many men have been counted more than once in Tables VI and VII, but the percentages are all figured on the basis of 442, 795, and 515. (Concluded on page 342)

Efficiency in Fiction

Dudism Vs. Nudism in the Arts

BY GELETT BURGESS

MY TEXT is from the "Memoirs" of Mr. Henry G. Massey, principal of the Heatherley School of Fine Art in England. A young girl, he says, once applied to him for a position as model for the nude class. She posed well, but on the third day he noticed that she was hanging about the office after her work. The secretary asked her if there were anything wrong. "Oh, no," she said, "only, I thought I was going to pose for the nude class." The secretary said, "But you have been, haven't you?" And the girl made the staggering reply, "Why no, it can't be the nude class because the students have all their clothes on."

My contention is that the girl had the right idea. Not that the artist should work literally naked, of course, but that he should cast off the old mental trappings of classic style and tradition, the starched costume of formula and self-consciousness, and attack his creative work in a new and freer way.

The expressive slang word, dude, used to describe a type now obsolete. The dude was an overdressed exhibitionist, attired in high collar, fancy waistcoat, and other sartorial extravagances. And as there is always a correlation between life and art, there was, almost until the World War, a Dudism which influenced all branches of creative art. It was characterized by four vicious qualities: complexity, imitation, falsity, and affectation.

Just as the beauty of the human form was stultified by corsets, rats, bustles, hoop skirts, and puff sleeves; just as manners were tortured, embroidered, and embellished with genuflections, courtesies, hand-kissings, and polite lies; so art had become artificial and pontifical. We need only glance over the Nineteenth Century to see how conventionalized it was.

Architecture was deluded by a classic complex. It had a sort of truth phobia. It proliferated columns, cornices, egg-and-dart mouldings, and consoles with no modern implication. It had a Greek mother-fixation, or perhaps, a Renaissance misconception of a Roman translation of the Greek. Imitation was epidemic. Wood masqueraded as stone, stucco as marble. Functional lines falsified construction. Design had lost all originality.

Painting was lost in labyrinths of mere technique. In 1907, I visited the Paris Salon and counted 16 pictures of a "Nude with Orange." Why artists painted nudes with oranges they didn't really know. It was what psychologists call behavior—mere automatic reflexes. They painted fishing boats, bowls of flowers, and dead fish because others before them had

"The paramount virtue of a machine is efficiency. That efficiency has, of itself alone, created a new form of beauty."



Museum of Modern Art

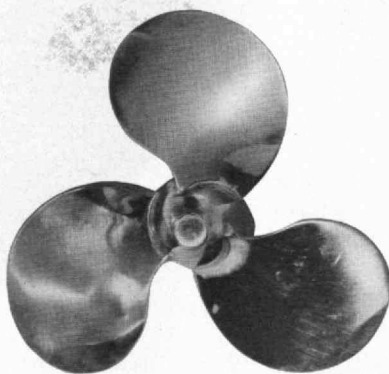
done it, just as automatically as dogs scratch with their hind legs on hard pavements. Artists, whether their work was anecdotal or impressionistic, were mannered and amazed.

Sculpture was even more Dudist. It was smug, slick, sophisticated. Statues of dignitaries stood amidst cogwheels, globes, and tomes. They were surrounded by naked ladies writing scrolls or flying and blowing trumpets. Everything those Dudist sculptors did had been done again and again thousands of years ago and done much better. They used more stencils and sandpaper than imagination.

Music was largely self-conscious and romantically overdecorated. Its harmonic language was filled with insignificant complexities and circumlocutions. So also the theater was overburdened with detail and the dance was brittle and formalized.

During the Renaissance even horsemanship became complicated. Instead of the free trot and gallop, steeds had to execute the *haut manège* or "raised airs." Such affectations were symbolic of the Dudism in life and art. And so in literature Dudist writers have volted, demivolted and curvetted, caracoled and caprioled in mincing phrases. Literature, like all the arts, was characterized by complexity, imitation, falsity, and affectation.

John Lyly was the Beau Brummel of literature and he gave a name, euphuism, to a vicious quality that persisted for centuries. No doubt Dr. Johnson had the longest tail to his locutionary coat and the most verbal



Museum of Modern Art

"... minimum of material . . . used with the maximum of effect."

ruffles, but it was Robert Louis Stevenson who was the modern fiction dude *par excellence*. Not that he hadn't golden thoughts and prime invention, but he had the high-hat view of writing and was fond of silky-satiny diction and spring-bottomed phrases. He set the style of mellifluousness and varnished verbiage.

It is almost impossible to overdamn the affectations of fiction which are only of late beginning to be demoded. Let me quote, out of 10,000 authors, one precious posturer:

"She was swung up into an exquisite heaven of pain where she was frozen with fear and stung with terror. She was swept down into an inferno of torment where she burned with remorse and suffocated with shame."

Now the sterility of such balanced palaver and egregious rhetorical figures is evident. An ultramodern Nudist author would say, "She felt like hell." That's all there is to say. It is impossible to describe suffering except by its reactions.

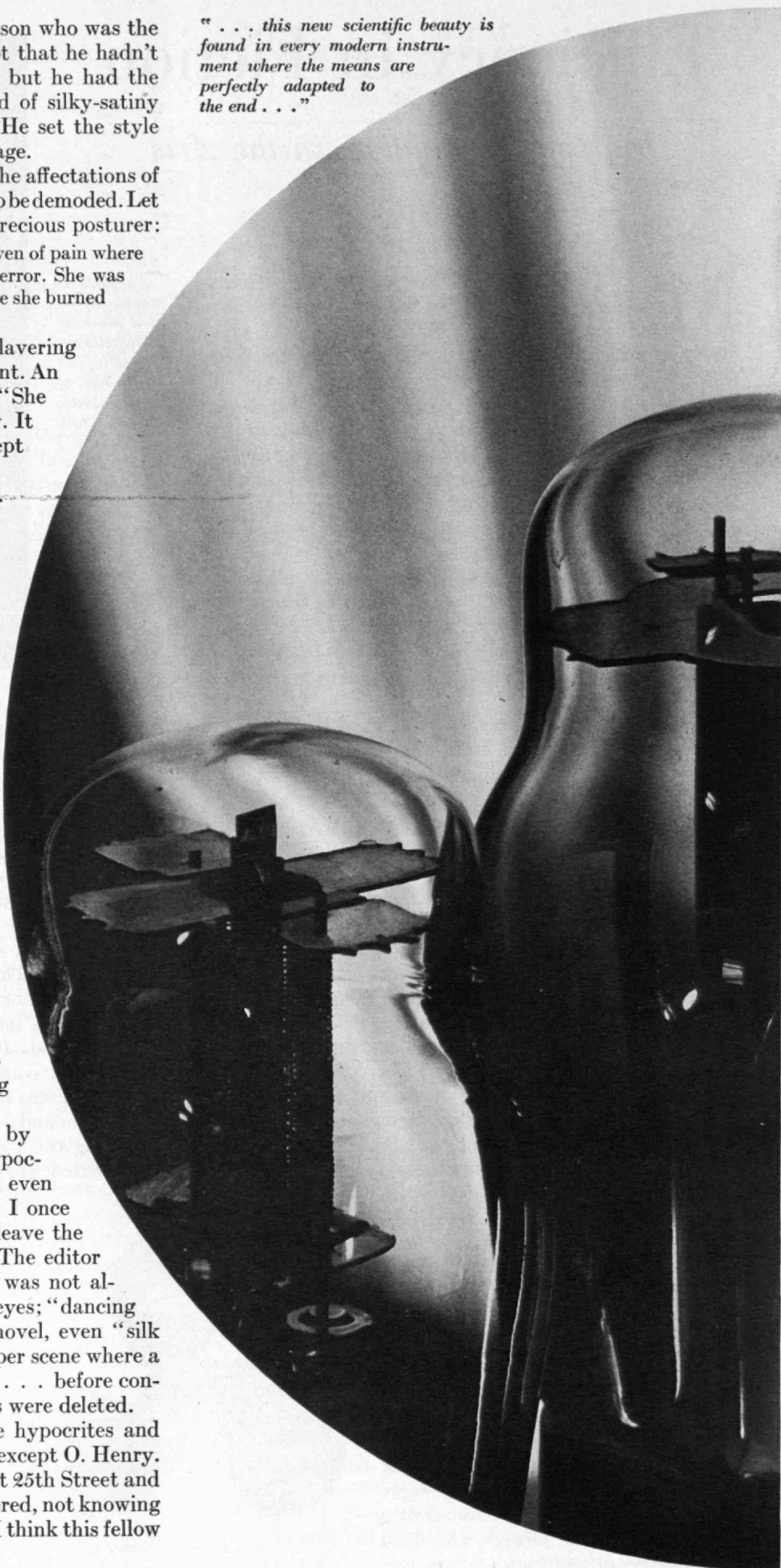
The literary Dude, you see, is a shirk.

He doesn't "think through" and he puts you off with feckless tropes. Not content with giving you mumbo-jumbo stones for bread, the Dude writer actually lies. How often have I read of a character being "wide-eyed." I have never yet found out what it means, nor does the author himself know. It is a phrase he wears like one of those ready-made neckties. In a recent magazine serial I read of "the calm, impassive face of the clock." A clockface cannot be calm and impassive; that is a lie. A clockface can be only a clockface. Nor can a telephone bell be "strident, urgent, imperious." It can merely ring — all else is the coloring of a diseased fancy, fed on "literary" dope. So, when I read that "his teeth ground together audibly," or "he could hear the beating of his own heart," I believe merely that the author is loafing on the job.

Literary Dudism is characterized by many such faults, and, notably, by hypocrisy and prudery. It is hard to realize, even for me now, that in a series of stories I once wrote my hero was not permitted to leave the house of his girl friend at 11 o'clock. The editor changed it to 10 o'clock. My heroine was not allowed to have a "dancing devil" in her eyes; "dancing light" was more proper. In my first novel, even "silk stockings" were taboo; and after a supper scene where a girl got tipsy and I inserted three dots . . . before continuing, next morning, those three dots were deleted.

We all knew, though, that we were hypocrites and bewailed the necessity — all, perhaps, except O. Henry. I remember calling on him once on West 25th Street and he said, "You know, Major (I was flattered, not knowing then that he called everybody Major), I think this fellow de Maupassant had a vile mind."

" . . . this new scientific beauty is found in every modern instrument where the means are perfectly adapted to the end . . . "



WELL, Dudism passed, or is passing, and, as the silent movie titles (apotheosis of Dudist styles) used to say, "Came the War." Like a huge ulcer it discharged its suppurating flood of shame and inhibitions and for a time we had stark reality. Art was purged of much of its disease of falseness. Girls' hair and skirts became shorter. Nudism made its jocund but startling appearance. Of course, I am not speaking only of physical Nudism, the love of "the wide open spaces" in woman's costume, or the mere cavorting on the grass of German Fräulein. I mean that Nudism symbolized a new regenerating force in art as well as in life. Artists began to strip off their tight, immemorial costumes of self-consciousness and revel in primitive delights. For complexity they substituted simplicity; for imitation, originality; for falseness, sincerity; and for affectation, naturalness, or naïveté.

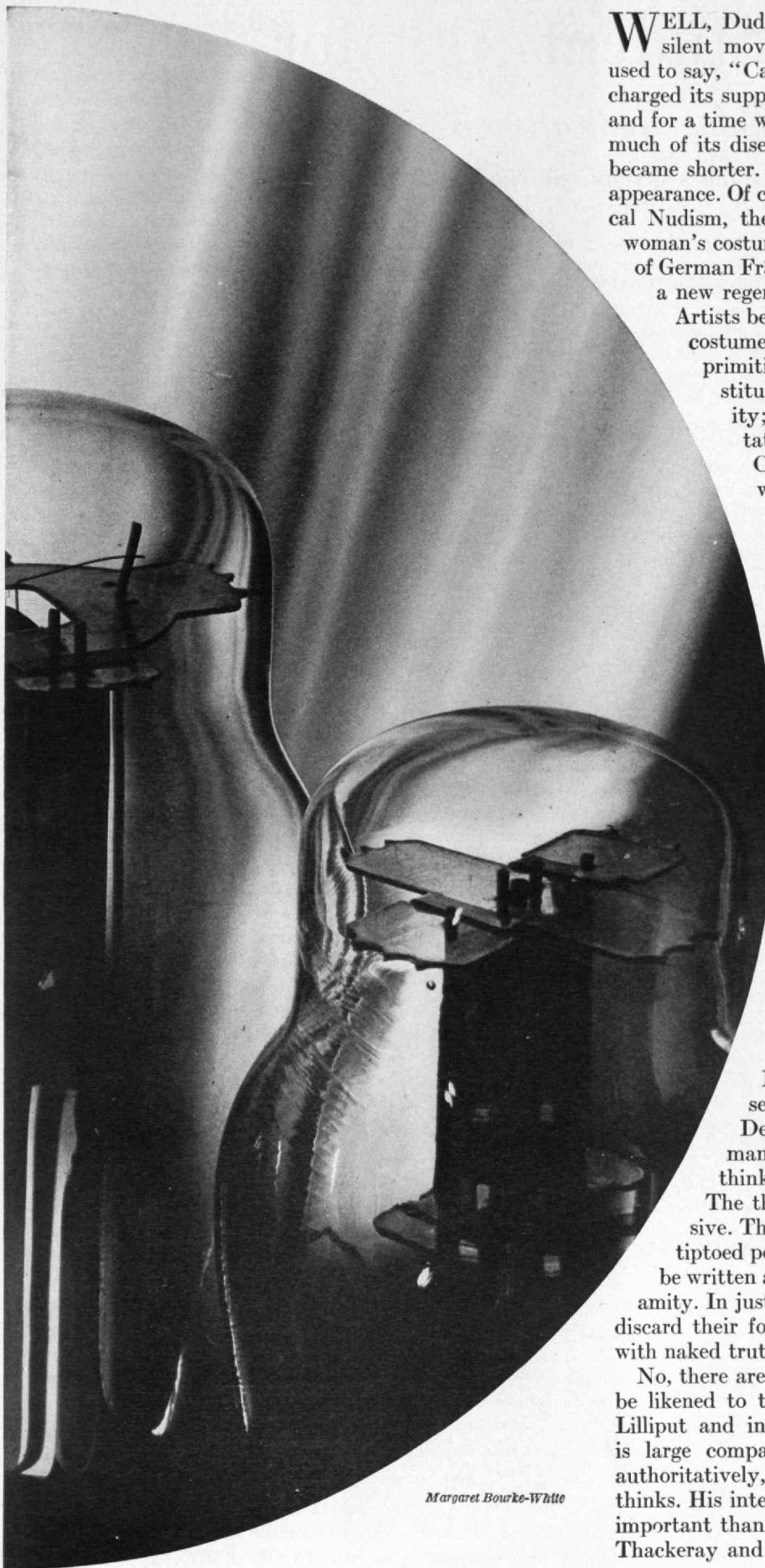
Columns, arches, consoles, and moldings were junked, and architecture revealed itself in simple, dignified masses, planes, constructional lines truthfully displaying its material. It smiled with new lighting effects; it blushed with a new use of color.

Music, too, after a revolutionary spasm of reversion to the primitive rhythms, dissonances, percussive choirs in the orchestration, and new timbres, settled into a saner neo-classicism, eschewing overdecoration. It adopted a straightforward simplicity of form like the transparently veiled nudes of old.

Painting became subjective. Painters began to wonder what lay beneath the surfaces they had so long worshiped; they encouraged visions. They reevaluated color, dared again the sharp imagery of earlier, naïve enthusiasm. In the striving for sincerity, artists went back to Egyptian rudiments and primitive African forms. Not all knew where they were going, but serious artists — like Matisse, Picasso, Derain — voluntarily abrogated draughtsmanship and began to experiment, began to think, began to dream.

The theater became more simple and expressive. The dance was freed from the professional tiptoed postures. Even business letters began to be written as from and to human beings in terms of amity. In just the same way writers are beginning to discard their formal, literary dress suits and to sport with naked truth.

No, there are two ways of telling a story. They may be likened to the travels of Gulliver (the author) in Lilliput and in Brobdingnag. In Lilliput the author is large compared to his characters. Patronizingly, authoritatively, he describes what he sees and what he thinks. His interpretations and analyses he holds more important than the characters and plot. The novels of Thackeray and Henry James (*Continued on page 332*)



Margaret Bourke-White

The Student Agitator

Is He Accepting Radicalism as an Opiate?

BY CARL BRIDENBAUGH AND NORBERT WIENER

EDITORIAL NOTE: *This is a paper on the psychology of youth, with especial attention to the mildly abnormal. There is, however, among intense partisans, a tendency to read into even the technical treatise the advocacy of a specific cause. In these times, when direct prophecy has become discredited, its implication is found by those who seek it even in the most ordinary expression of opinion. We, therefore, categorically deny that there is in this paper any intent by the authors to further any particular social creed, or political system. We do not know what changes in our system, if any, may or may not come. We are not prophets.*

The faults we see in youth occur on the right as well as the left. The American college student, taken by and large, is a queer mixture. Fortunately, his idiosyncrasies leave him still, on the whole, an exceedingly likable fellow. So we dissect him mentally with the best of sympathy. The traits we find are usually wholesome,

sometimes amusing, and rarely disquieting. We sometimes wonder if he knows to what extent he can be both amusing and genuinely pathetic.

Our young student often finds in us, his elders, much in the way of amusement and even of pity, but he perhaps does not realize to what an extent the rôles may be reversed. But he is sound material for all that. The world depends on him, and we do not think it will be disappointed. It is only toward the occasional excesses of the many, or toward habitual tendencies of the few, that this analysis is directed with sympathy and friendliness.

One charge, of which all too many people are guilty, cannot be directed against the modern American college youth of any shade of opinion: he is no hypocrite. He has cast overboard many customs of speech and manner in his great disillusionment. Some of these might well have been retained. His battle, however,

against sham and hypocrisy is a very real service to the right side. There is some danger that the authors' counsel of reasoned preparation for constructive effort, as against frenzied agitation, may be misconstrued as a recommendation of subterfuge or indirection. This is not so. If the chief objective of an individual is amelioration of social injustice, he need not apologize for its worthiness. The university has no place for the intellectually dishonest.

AMONG the pronouncements of Communism, perhaps that which has sunk most deeply into the public consciousness is a borrowed one. Robert Owen stated, "Religion is the opiate of the people," and this motto, sanctioned by the approval of Marx, is carved on the tomb of Lenin. No utterance of Communism has been more used by its opponents to bring it into disrepute, especially among the supporters of orthodox religion.

An opiate is merely an anodyne or anæsthetic, particularly one which tends to be abused because of its habit-forming properties. Few religious people



World Petroleum
Fuel gatherers in the desert pause
to inspect the Iraq pipe line

would care to deny that their religion possesses a definite therapeutic value as a refuge from care and a solace from pain, or that the consciousness of salvation and the certainty of an intellectual dogma and a moral code may give peace and hope to a soul tortured by uncertainty and the necessity for numberless decisions.

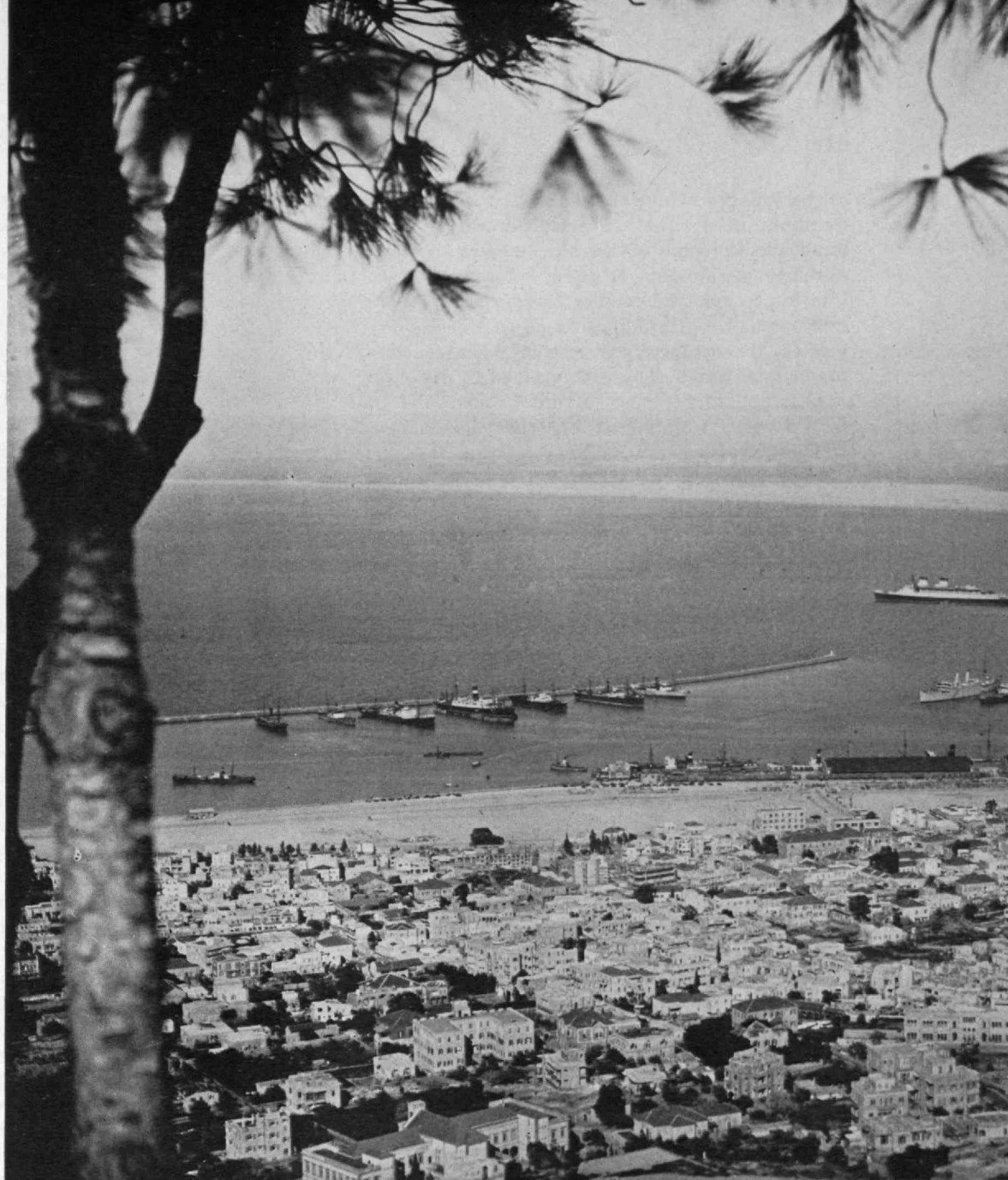
Most honest and experienced clergymen would admit the possibility of abuse of this by adolescent souls faced for the first time with the burden of individual responsibility. No monastery is eager to accept a preponderance of novices who regard a monastic life merely as an escape from their normal problems, and have not something positive to offer in the nature of a vocation. No priest is unaware of the parishioner who enjoys the emotional experience of the confessional and for want of real sins invents shadowy misdeeds. Parson, minister, and rabbi are equally aware of like forms of religious exhibitionism.

For reasons physiological as well as social, adolescence is a period of intense emotional and mental strain. There are those who do not survive this period. Some commit suicide, but many more commit a partial suicide by withdrawing from the complex world of struggle and strife into a simpler world within themselves, sink deeper and deeper into a profound apathy, and willingly let the community assume the burden of their support. Our madhouses are peopled with these victims of what is known as dementia praecox, and, even in the best of times, those afflicted with milder grades of this disorder do much to fill our tramps' jungles and flop-houses, or drift from job to job as marginal employables. We do not mean for a moment to confuse the problem of these people with the general problem of unemployment.

To many, adolescent religion comes as a life-preserver in this sea of insanity. They find in a fixed creed and a recognized set of responsibilities something to which they may cling. Yet, a few of those who find in religion an escape from madness carry the same tendency to instability into their religious lives. They have been saved by faith; therefore, whoever questions that faith

threatens their sanity. For them, it is truer to say that religion is the search for salvation, than that salvation is the normal consequence of their religious life. They are what Dr. Holmes calls religious hypochondriacs, taking their moral temperatures a dozen times a day. They are consumed by a desire for martyrdom and mortification of the flesh that amounts to a mental masochism. Above all, they are selfish with the selfishness of the bigot who lusts after his own individual salvation, though the rest of the world be eternally damned. Such was Simeon Stylites, filthy and ragged, indifferent to all about him, perched on his lonely pillar in an ecstasy of self-directed religion. Such is the Malay fanatic, who runs amuck, slaying all about him, hoping to enter the Moslem paradise when someone brings him down. To this selfsame class belongs one group of the young radicals of our colleges.

Communism is perhaps much more than a religion; religious attributes it most certainly has. Communism, Nazism, Fascism all agree in possessing sacred books



World Petroleum

The harbor of Haifa, Palestine, one of the terminals of the great pipe line, where Irak oil reaches the Mediterranean. Just outside the breakwater lies the Conte di Savoia

or personages whose utterances it is blasphemy to question, in a ritual of activities which occupy the mind and the time of their devotees, in an assurance of absolute justification to their followers, and in an invitation to martyrdom. For the purpose of the present discussion, we are indifferent as to whether their dogmas are true or false; we are chiefly concerned with the manner in which they are received by their followers.

It is not, however, irrelevant to point out that just because the Communist doctrines have been better thought out than those of Nazism or Fascism, and represent a much more real attempt to cope with the present situation of the world, their adherents are to be found in what is, on the whole, a more active intellectual group of the student body of our universities. Hence they constitute a more interesting and important problem. Students of today have been called the "lost generation." It is certainly no blessing to come to maturity in a period of such doubt and turmoil. Our industrial system, to put it mildly, is not functioning so well that it can be set up as a model for the world to copy. Our changing political system is far from any equilibrium. In a world where unemployment is rife, the young student cannot look forward to his individual future with any confidence. War threatens from all sides, with an outcome that may well be the end of civilization. In all this confusion, the young man desires above everything to do the right thing. Even harder than his uncertain future is his uncertain duty. Is it any wonder that he welcomes a faith like Communism which dictates his duty and predicts his future?

We sincerely believe that Communism as a faith has performed a service in supplying to many unsettled adolescent minds a creed and a purpose. Protest meetings, picketing, heckling, and like activities may seem antisocial to many of us who are not of the faith, but they frequently serve to divert the energies of youth from channels perhaps more dangerous. Unfortunately, many youths rest content in these activities and feel that in them they have discharged their entire duty to society. They find satisfaction in a prescribed pattern of activity which releases them from the necessity for thinking out social problems for themselves and from the desire for self-development to a point where they can accept with confidence the normal responsibility of everyday life. Many of them meet all accusation of individual lack of judgment or unreliability with the assertion, spoken or tacit, that life under Communism will be so different from life under the present *régime*, that all duties and responsibilities as now interpreted will become null and void and that the categories of conduct holding before and after the revolution have nothing in common with each other.

Now this is very false and justifies our assertion that many of these young men take their communistic religion as an opiate. Many of them talk of the revolution, but feel that this contingency is so remote that its proximity need have no effect upon their present conduct. There is a radical song to the effect that the pie in the sky, when you die, is a lie. These young Communists regard the pie of the earth after the revolution as so distant an article of food that its baking can in no way concern them personally.

The result is a mass of young agitators, hecklers, and picketers who are much more interested in the pleasures and pains of immediate martyrdom than in any real effectiveness in the time when the revolution which they predict may have arrived. They escape from the present into a future too remote to make any real demands on them, and are bound by the realities neither of this world nor of the next. They are a continual embarrassment to their well-wishers. Their behavior at meetings for social or political purposes tends to convince those who watch that whatever there may be in the Communist theories, the Communist personnel is totally unfit to assume any governmental responsibility. We do not assert that the Communist personnel as a whole is so unfit. We do not know what resources of administrative talent and ability may be drawn from among workers with whom we have not had an adequate opportunity of direct contact.

We are assured by people who should know that there is a much higher level of ability in such circles than most of us realize. We merely wish to state that in the universities, where the opportunities of training are greatest and where young men are being prepared for technical responsibilities of the greatest moment under any political *régime*, much of the radical movement is in the hands of young men who, whatever their academic standing, are totally devoid of judgment, responsibility, and the commonest decency in dealing with those who have no quarrel with them and who might stand ready to help them in some of the objects for which they are agitating.

From the political confusion and enmities of the present time, the occasion may well arise to enlist the political capabilities of people of every shade of opinion. No man can say that an economic change is so distant that we can neglect the problem of how to carry on after such change has been effected. It should be clear even to the feeblest intelligence that all is not well with our present economic system and we shall doubtless witness experiment after experiment. No opposition party, however small the minority it may represent, can afford to ignore the possibility that it may be called at a moment's notice to form a government. If this happens to our Communist friends, their agitators will at once have to seek new jobs. The complex economic life of our country must go on, and there will be a call for technicians, engineers, and those versed in the internal economy of our different industries. Decisions will have to be made as to the apportionment of food to the public and of fuel and power to different factories, as to what factories should be run and which should be closed down, and so on. These considerations of policy may be modified by a change in the social system, but the need for such decisions will not be eliminated. Such decisions can be made wisely only by men who have technical training and who, in addition to that technical training, have a sense of responsibility, cool judgment, and an ability to work without personal friction with persons of the same or of different opinions. Our technical schools will naturally be called upon to furnish their quota of such men. It is these men, the Carnots of a revolution, rather than its Robespierres, who determine its ultimate success. They will not be judged (*Continued on page 344*)

Literary

There is a fish-like thing, the Squid,
Who chews a philosophic quid
And at the merest wish or wink
Spits up a cloud of purple ink,
Which hides himself and all he did.
He is a literary kid.*

WHETHER the ink which Max Eastman's literary squid spits up is purple out of respect for Gelett Burgess' Purple Cow is of no consequence. The only significance which can be derived from that bit of doggerel is that certain writers so cover themselves with the ink of their literary productions that they, as individuals, are unrecognizable. Completely obscured by purple ink, sometimes, is the fact that an author may not be a "literary kid," but beneath it all a scientist or an engineer, even a Technology graduate.

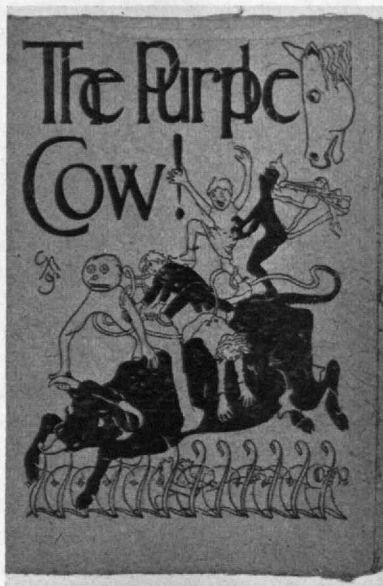
Much — too much — has been said and written about the concentricity of the spheres of science and literature. William Wordsworth, Matthew Arnold, Tyndall, Huxley, Cardinal Newman, Ruskin, Brunetière, Zola, and countless others have copiously expounded what literature has derived from Nineteenth Century science. But little attention has been paid to an opposite, though obviously unequal reaction; namely, the desertion of certain modern scientists and engineers to the camps of literature.

Specifically, it seems high time that something should be said about those bepurpled alumni of Technology who have abandoned the slide rule, test tube, and dumping level in favor of the pen, typewriter, and galley proof.

There is a surprising number of these writing engineers; the list below makes no pretense of being complete. These men are not, in any necessary sense, illegitimate offspring of *Alma Mater*, nor has the advent on Parnassus of scientifically trained writers caused any perceptible commotion. They follow, as a matter of scientific, historical fact, in honorable footsteps, for English and American letters abound in examples of early professional training obscured by later literary success.

Thomas Hardy, for example, educated as an architect, forsook his drafting board to write the Wessex novels and later forsook the Wessex novels for poetry. William Morris, likewise, served an apprenticeship in architecture before beginning his literary career. More recently H. G. Wells, a quondam drug clerk and draper's assistant, took a B.Sc. degree from the Normal School of Science at South Kensington and then gradually

* Eastman, Max, "The Literary Mind: Its Place in an Age of Science," p. 27. New York: Charles Scribner's Sons, 1932.



BY PAUL C. EATON

Engineers

emerged as a man of letters, eventually to experiment in autobiography.

A New Bedford whaleship, in itself a little square-rigged engineering world, was for Herman Melville his Yale College and his Harvard; and skill in the science of navigation was acquired by Joseph Conrad before he realized, on finishing "The Nigger of the Narcissus," that he was done with the sea and henceforth *had* to be a writer. James Fenimore Cooper served as a naval constructor in the United States Navy, and Poe won his appointment to West Point by meritorious service as a regimental sergeant major in the regular army.

The law, training for which is not unlike that for science in its exactitude, attracted as students Sir Walter Scott, Robert Louis Stevenson, Henry James, and Arnold Bennett. Tobias Smollett was trained in medicine, a science which was later the first love of Oliver Wendell Holmes, Robert Bridges, and James Joyce. Anton Tchekov took a degree in medicine and found, according to his own testimony, that scientific study had aided his literary career by enlarging the range of his observation.

Thus, it should be apparent that early contact with science need not bar a man forever from literature, any more than from any other art. And thus, again, it should not come as too much of a shock to find on the jackets of important recent books in the humanities names of such Technology men as Allen French, '92, Gelett Burgess, '87, Irving Fineman, '17, Stuart Chase, '10, William Beard, '28, and Parker Morell, '28. On the editorial staffs of modern newspapers and magazines Charles H. Heustis, '76, Alfred Kocher, '13, James A. Tobey, '15, E. P. Warner, '17, Kenneth Reid, '18, and Donald Fink, '33, are others who, in the last half century, have found the pen mightier, or at least more attractive, than the slide rule.

Writing for the sake of publication — reports, tracts, papers for learned societies, articles for trade journals — is a necessary part of any professional activity; but when a Technology man writes for the sake of writing, that, in a sense, is news. And even Polonius' "Comical-historical-pastoral-tragical" is an insufficient adjective to cover the range of some of this non-professional professional writing once it gets outside scientific bounds.

Gelett Burgess, '87, to begin with, has had a colorful literary career. For three years after graduation a draftsman with the Southern Pacific Railroad, then instructor in topographical drawing for three years more at the University of California, he became interested

editorially in magazines and the then popular chapbooks, *The Wave*, *The Lark*, and *Ridgeways*. During this career, he found time to write "Vivette," which appeared in 1897, "The Lively City o'Ligg" in the following year, and the first installment of the famous Goops cycle — "Goops and How to Be Them." The immediate popularity of the Goops occasioned "More Goops," 1903, and "The Goop Encyclopedia," in 1918.

Collaboration with Will Irwin produced "The Pica-rooms" and the "Reign of Queen Isyl"; and a single-handed venture into dramatic literature was made with "The Cave Man" in 1911. The Goops appear certain of longevity, if not immortality; but it seems even more certain that the essay "Are You a Bromide?", which first saw daylight in 1907, will jostle smugness and vapidness out of several more generations of readers. "Two O'Clock Courage," a recent successful venture in detective fiction, and, of course, "Efficiency in Fiction" in this issue of *The Review* (page 307) are several more of Mr. Burgess' recent activities. And it was he who wrote:

I've never seen a purple cow;
I never hope to see one;
But I can tell you anyhow,
I'd rather see than be one.*

There is a type of engineering mind, too familiar to those who profess and call themselves teachers of literature, which sees values only in terms of figures. There is another type, locally labeled the XV type, which sees values largely in terms of dollars. For the particular consideration of these two types, the figure \$7,500 is hereby submitted. That sum, in 1930, when a dollar was a dollar, was won as the Longmans Green prize in that year for the novel "This Pure Young Man," dealing with the plight of an idealistic young architect before and during the World War. The author was Irving Fineman, '17, construction engineer, naval officer, faculty member in the College of Engineering, University of Illinois.

With such material encouragement, it is not surprising that Mr. Fineman should continue his literary work. "Lovers Must Learn," a modern love story with a Parisian background, 1932, and, in the following year, "Hear Ye Sons," a study of the traditional background of a successful American-Jewish lawyer and his family, are two subsequent novels. Short stories, literary criticisms, and occasional verse have likewise occupied Mr. Fineman's time, much of which, however, has recently been devoted to his lectures at Bennington College, where he is now on the faculty of literature. The fact that the novel on which he is now at work will have an engineer for its hero is evidence that Mr. Fineman's interest in engineering has not suffered total eclipse.

In the field of history, which adjoins, sometimes with an imperceptible boundary, that of literature, the Institute has several representatives. Possibly Allen French, '92, is the most eminent. Mr. French is a product of old Course IX, which gave a general education fairly comparable to an academic course, superior, possibly, according to its graduates, because of the hard work required. Mr. French was for some years on the board of

The Tech; but as to whether that fostered or hindered his literary career, deponent sayeth not. He does say that he always wanted to write, and from boyhood trained himself to do so.

That he has been successful in his chosen field of history, his most recent book is eloquent testimony. "The First Year of the American Revolution," published last November, represents nine years of painstaking research in documentary and printed sources. Previously, because of living in Concord, he had published "The Day of Concord and Lexington," 1925, and the "Siege of Boston" in 1911. Also of importance in his training for such a readable and definitive work as "The First Year" is his long career as a novelist. The novels may be now, to use his own modest adjective, defunct; but some of the juveniles are still on the market. Mr. French can teach as well as do, having served in the English Departments of both Technology and Harvard.

Another historian of merit was the late Seth K. Humphrey, '95, who entered the Institute at the age of 31, after 14 years on the frontier as miller, broncho driver, and land operator in the Cherokee strip. Studying at more leisure the background of his active life, he wrote in 1904 "The Indian Dispossession." "Mankind," and "The Racial Prospect," on eugenics, followed in 1907 and 1920 as the result of special studies. Two travel books, "Loafing Through the Pacific" and "Loafing Through Africa" appeared in 1928 and 1929, respectively; and "Following the Prairie Frontier," in 1931, was a reversion to his early background, wherein he concluded that frontiers were all pretty much alike, even in Africa or the South Seas.

History in the making is always a concern of engineers and scientists. Four Technology men, among others, have been prominent in the kind of writing that endeavors to make clear the obscurities of current affairs. Eric Hodgins, '22, now active on the editorial staff of *Fortune* and F. Alexander Magoun, '18, associate professor of humanities at the Institute collaborated on "Behemoth, the Story of Power," in 1931. "Sky High" and the "History of Aircraft," respectively popular and scholarly books on aviation, are also the result of this collaboration.

The name of Stuart Chase is more widely known than is the fact that he attended Technology. Two years, 1907–1908, at the Institute taught him, as he says, the discipline of hard work and gave him a foundation at least for the scientific attitude toward economics, which is now his principal field of speculation and writing. "Your Money's Worth" in collaboration with F. J. Schlinck, "Men and Machines," 1929, and "Mexico" in 1931 are outstanding works of his within this field. "Prometheus Enchained," originally published in *The Review*, gives Mr. Chase's views on the relation of engineers and scientists to our present scheme of things. That article, incidentally, was subsequently reprinted in several books of essays.

Edwin S. Burdell, '20, now in the Department of Economics and Social Science at the Institute, recently contributed to *The Review* an article on subsistence homesteads. His other publications have been articles on various aspects of sociology and city planning, for the American Red Cross, the (*Continued on page 328*)

* At the beginning of the article is reproduced the cover of the chapbook (1895) which first presented this bovine quatrain.

A Message from President Compton

In a Letter to Alumni Readers of The Review He Reports on New Plans and Developments at Technology and Issues a Stirring Call for a Large Attendance on Alumni Day

TO TECHNOLOGY ALUMNI:

AS THE commencement season approaches, our interest is naturally focused on the great Alumni Reunion which will inaugurate the new plan of annual alumni gatherings at the Institute. We believe that this new plan is a most happy one. It retains the attractive features of the individual class reunions to be held wherever the classes may desire within a few hours travel from Boston, while, at the same time, it adds the new feature of a gathering by the alumni group as a whole at the Institute and makes this latter feature available to Alumni of all classes. For the sake of all concerned we sincerely hope that this first reunion under the new plan may be a great success. I hope, therefore, that each and every Alumnus may take an individual interest in this program and plan, if possible, to participate in it.

In connection with the program, which is amply described elsewhere, there are two features of special interest to particular groups, on which I should like briefly to comment.

This June marks the 50th anniversary of the granting of the Institute's first degrees in Electrical Engineering. So far as we can ascertain, these were the first degrees of this type awarded anywhere in the world. For the graduates of Course VI there is planned, therefore, a special celebration on Alumni Day, with an historical exhibit, a symposium on certain problems of basic interest to the Electrical Engineering profession, and social features. It is a fortunate coincidence that this 50-year mark affords an opportunity to pay a deserved tribute to Professor D. C. Jackson, who for 28 years has been the distinguished leader and builder of our Electrical Engineering Department, and who retires on July 1 at the age of 70. Under his inspiring and aggressive guidance the Department has become one of the really great educational and research agencies of the world.

At the same time, we will have the pleasure of welcoming the new Head of this Department, in the person of Edward L. Moreland, '07, former student and colleague of Professor Jackson, distinguished consulting electrical engineer, and a man who has won the affectionate respect of his fellow Alumni because of his personal charm and his loyal and effective service to the Alumni Association. For Course VI men, therefore, the reunion will combine a celebration of a milestone of the Department, a tribute to Professor Jackson, and a welcome to Mr. Moreland.

The second feature of Alumni Day of interest to a special group will be the President's luncheon for the presidents and secretaries of Technology Alumni Clubs

and the Honorary Secretaries who now represent the administration of the Institute in 108 strategic localities all over the world. This luncheon is planned as a conference on effective coöperation between these alumni representatives and the Institute in the interest of the best possible furtherance of those objectives of education and public service which are the purposes of M.I.T.

One of the questions which will be discussed in this conference has to do with ways and means for stabilization of enrollment in such manner that the Institute can perform its functions with the greatest effectiveness. We assume the following basic principles: (1) The Institute should aim to provide each individual student with the best possible training, guidance, and inspiration; (2) the Institute should make this service available to the largest number of students who can be thus handled without detracting from the effectiveness of the training; (3) the Institute should concentrate its efforts upon students of such fine character, personal qualities, and ability as shall give the best promise of desirable and effective careers.

As corollaries to these principles we may assert that there should be no Technology graduates whom employers would not feel privileged to have in their organizations; there should be no Technology graduates who do not have a high ideal of public service and responsibility; none of the resources and efforts of the Institute should be spent ineffectually.

To approximate as nearly as possible these ideals requires the best efforts and wisdom of the instructing staff and the best counsel and assistance of the Alumni. A committee of the Faculty, under the chairmanship of Dean H. E. Lobdell, '17, is undertaking a study of ways and means for a closer approach to these ideals and will bring to the luncheon conference some specific questions on which the coöperation or advice of the conferees is desired.

In addition to this question there are certain other problems relating to the effective handling of local problems by alumni representatives, which will be presented for discussion, and I should particularly welcome the receipt from alumni representatives of any statement of specific problems which in their judgment may be discussed to advantage on this occasion.

In conclusion, I am glad again to be able to report excellent spirit and performance by students and staff, and to extend to you on behalf of the Administration a hearty welcome to the Institute on Alumni Day.

Cordially yours,

KARL T. COMPTON

The Alumni Festival in June

*Over a Thousand Alumni Have Written
"I Hope to Be Present"*

AS THIS issue of The Review, one of the largest ever published, is "put to bed," 1,112 Alumni have written that they hope to be present on Alumni Day at Technology on June 3 and over 500 Alumni have definitely reserved Alumni Day tickets. This remarkable demonstration of interest two months before the Reunion presages an occasion of memorable jubilation and festivity.

Of the many items listed in the formal program presented on the opposite page, two are particularly noteworthy. The first is the Alumni Institute of Professional and Industrial Progress. This Institute, which will consist of round-table discussions arranged by departments, has two objectives. The first is to afford the Alumni of each department a chance to bring back to their department ideas and information drawn from their practical experience. The second objective is to afford Alumni an opportunity to familiarize themselves with new developments in their departments. Each department is inviting the coöperation of prominent alumni and the resulting programs should be at once interesting and informative to those who participate in them and of great value to the department itself.

Electrical Engineering Celebration

The second notable feature on the program of Alumni Day is the celebration of the Semi-Centennial of the granting of the first degree in electrical engineering at Technology. The program includes a symposium for the purpose of reviewing electrical engineering education

in the United States during the past 50 years, with particular reference to the influence which the Institute has had on its development. Thereafter, there will be a luncheon for all Course VI men in attendance. This is given as a testimonial to Professor Dugald C. Jackson, who will retire from his position as Head of the Department of Electrical Engineering at the expiration of the present academic year. At the same time the Course VI alumni will at this luncheon welcome the new Head of the Department, Edward L. Moreland, '07. In the afternoon there will be Open House in all Electrical Engineering laboratories, and there will be an historical exhibit to illustrate the progress and present status of the Department.

The Semi-Centennial Committee of the Department of Electrical Engineering now announces the following acceptances from the speakers invited for the symposium and testimonial luncheon:

Symposium: Dr. F. B. Jewett, '03, President, Bell Telephone Laboratories, Inc.; Dean A. A. Potter, '03, School of Engineering, Purdue University; and Dean Vannevar Bush, '16, M.I.T., Professor Jackson presiding.

Testimonial luncheon: Hammond V. Hayes, '85, Charles A. Stone, '88, Chairman of the Board, Stone and Webster, Inc.; Gerard Swope, '95, President, General Electric Company; Dean W. S. Rodman, '09, Department of Engineering, University of Virginia; President Karl T. Compton; and Professor G. C. Dahl, '21, Department of Electrical Engineering, Alexander Macomber, '07, presiding.

A preliminary notice of these events was sent on April 15 to every graduate or former student in Course VI whose address was known. If any reader who has been associated in any way with Course VI has not received this notice, he should send his name at once to Professor R. G. Hudson, '07, Secretary, Semi-Centennial Committee, M.I.T., Cambridge, Mass. He will then be included in the mailing list receiving the final program and reservation card.

Special Instructions to Alumni

For those Alumni who will travel to Boston by train for Alumni Day, special railway fares will be available on the identification certificate plan. When Alumni receive their formal application for Alumni Day tickets, they will have an opportunity to indicate whether they wish identification certificates supplied to them.

Dress for the grand dinner in Symphony Hall will be informal, and except for Technology Alumnæ, it will be stag. Special arrangements are being made to enter-

President's Reception to Graduates

To the Alumni:

The Committee on Graduation Exercises and Senior Week extends a cordial invitation to the Alumni and their guests to attend the President's Reception to the Graduates on Tuesday afternoon, June 4, from four to six in the Walker Memorial.

Refreshments will be served from tables with departmental designations arranged in alphabetical order under the balconies, and music will be provided for dancing. The laboratories of the Institute will be open for inspection from two to four on the same afternoon.

The Committee hopes that many of the Alumni will extend their visit and attend this social event of Commencement Day.

R. G. HUDSON, *Chairman*

tain the wives and women friends of Alumni, and seats will be available to them in the balcony of Symphony Hall for the program of speaking and music which will follow the dinner.

Future reunion notices and formal application blanks will be sent only to those alumni who asked to have them sent on the reunion questionnaire which went out in March to all former students of the Institute. If you have not requested further reunion material and desire it, please communicate with Charles E. Locke, '96, Alumni Secretary, M.I.T., or Hamilton L. Wood, '17, M.I.T., Chairman of the Assemblies Committee in charge of the Reunion.

Special Library Exhibit

The Institute librarian, Professor W. M. Seaver, has asked The Review to announce that there will be an Alumni Day exhibition in the library of published works of Technology men. This exhibit will cover the years 1930 to 1935, but material published earlier will be welcomed if not already in the library. Alumni who have published books or pamphlets are requested to send to Professor Seaver either the actual books themselves or, if that is impossible, a list of publications with the names of publishers and dates of publication. The library plans to issue a printed list of these published works of Technology Alumni.

Program

Listed below are the events that have been definitely scheduled for the June reunion, and in the two boxes on this and the opposite page is presented special information about the President's reception to Alumni on June 4, and the individual Class Reunions which are scheduled for the week-end prior to Alumni Day.

May 31-June 2

CLASS REUNIONS. Scheduled reunions of classes ending in 0 and 5 are listed in the adjacent box. Many other classes are holding outings, luncheons, or dinners. Ask your Class Secretary for details. On Sunday, June 2, many non-reunion classes gather for an outing.

June 3

Alumni Day at Technology

Morning

9:00 A.M.-11:00 A.M. REGISTRATION and group meetings in Alumni Tent, Great Court.

9:30 A.M. STRATTON PRIZE CONTEST, Room 10-250. Presentation of technical papers by students.

9:45 A.M. ALUMNI INSTITUTE OF PROFESSIONAL AND INDUSTRIAL PROGRESS. Alumni and staff of each Institute department will join for a round-table discussion of the work of the department and of developments in the professional field covered by the department. Special symposium of Electrical Engineers. See details on opposite page.

1:00 P.M. GROUP LUNCHEONS. The Electrical Engineers

join for a testimonial luncheon to Professor D. C. Jackson. Other luncheons arranged by fraternities and other organizations.

PRESIDENT'S LUNCHEON FOR HONORARY SECRETARIES AND THE PRESIDENTS AND SECRETARIES OF ALUMNI CLUBS.

Afternoon

DEPARTMENTAL RECEPTIONS, laboratory inspection, and special exhibits. One, and perhaps two, of the newest streamline trains will be on the Institute lot for alumni inspection, together with the latest designs in air-conditioned passenger coaches and buses. By way of contrast, a passenger coach of vintage 1835 will be on inspection.

Evening

6:30 P.M. GRAND DINNER IN SYMPHONY HALL. After the dinner and a short program of speeches, there will be a concert of the Boston Symphony Pops Orchestra. The dinner is for Alumni and Alumnæ only and their male guests. Special facilities will be provided for women guests, and seats in the balconies of Symphony Hall may be obtained for them for the speaking and musical program following the dinner. Seating at the dinner will be by classes or by alumni clubs if any clubs desire it.

June 4

GRADUATION EXERCISES. Alumni are specially invited to the President's Reception to Graduates in Walker Memorial from four to six in the afternoon. See adjacent details.

Class Reunions

The following classes have reported reunions at the places and times indicated and are including Alumni Day as part of their program:

1895 — 40th Reunion, Oyster Harbors Club, Osterville, Mass. June 1-2.

1900 — 35th Reunion, East Bay Lodge, Osterville, Mass. May 31-June 2.

1905 — 30th Reunion, Boxwood Manor, Old Lyme, Conn. June 1-2.

1910 — 25th Reunion, Headquarters at University Club, Yachting Trip in Harbor, Class Dinner, 7 P.M., May 31; Oyster Harbors, Osterville, Mass. June 2-3, until after breakfast.

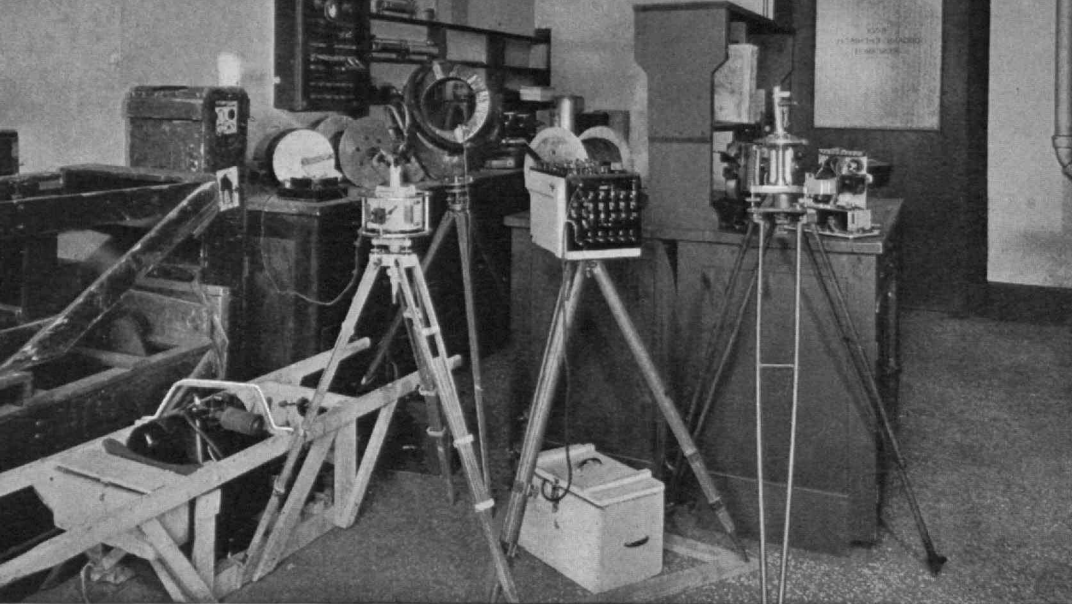
1915 — 20th Reunion, Ye Castle Inn, Cornfield Point, Saybrook, Conn. May 31-June 2.

1920 — 15th Reunion, Norwich Inn, Norwich, Conn. May 31-June 2.

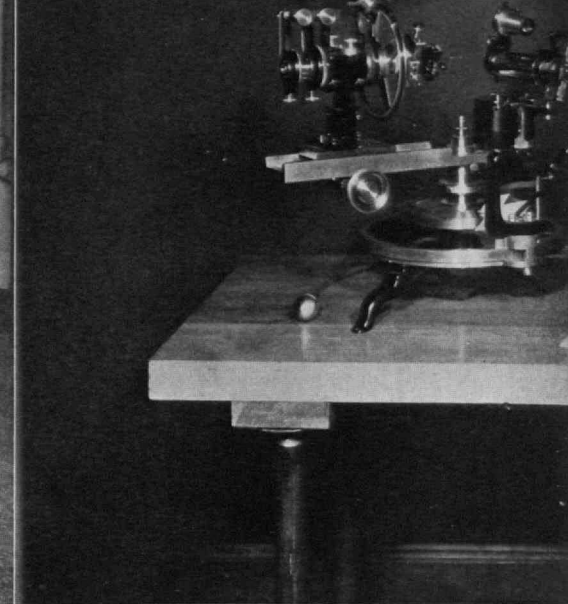
1925 — 10th Reunion, Corinthian Yacht Club, Marblehead, Mass. May 31-June 2.

1930 — 5th Reunion, Toy Town Tavern, Winchendon, Mass. June 1-2.

1885 is delaying its reunion until June 20, when it will convene at Wellfleet, Mass. Plans are not yet completed for the 1890 reunion. For classes prior to 1885 no information was obtainable.



Instruments for geophysical prospecting



Measuring angles on mineral crystals

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Research Beneath the Crust

BECAUSE the primary agencies which control many fundamental geological phenomena reside at depths of five, 30, or even 1,000 miles or more below the surface, studies of the structure of the earth at such depths have always been of keen interest to geologists. The problem of studying materials and structures so far below the range of our deepest mines or drill holes offers stimulating opportunities for the imagination in the invention of suitable experimental and theoretical techniques. As is almost always the case in a worth-while research field, the methods and results developed find application and value outside the problem which directly inspired them.

At present, four or five different lines of approach to the study of the deep earth are represented by research sponsored directly or indirectly by the Institute's Department of Geology. Dr. Chaim L. Pekeris, '29, General Education Board Fellow in Geophysics, has completed a theoretical study of the effect of variations in the upper crust upon the propagation of surface waves from earthquakes. He is also studying the fundamental problem of slow, thermally driven convection of the deep interior of the earth. A deep-seated circulation system of this kind has been postulated by some to support the hypothesis that continents have migrated slowly over considerable distances during geologic time, riding, so to speak, on the back of a great, slow convection system. The problem is related, in some respects, to the internal convection in stars, to thermal circulation problems in oceanography, and to the circulation of the atmosphere, and it also has a possible fundamental relation to the mystery of the earth's magnetic field.

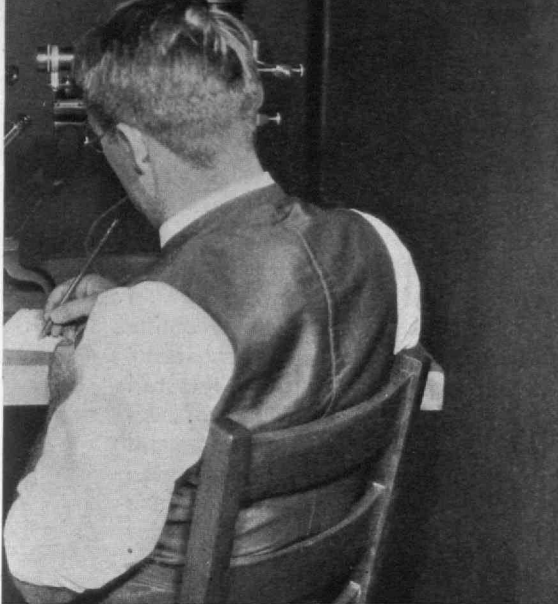
A report of a new approach to the problem of the structure of the upper crust will shortly be published by Dr. J. A. Sharpe, General Education Board Fellow in Geophysics, from the University of Wisconsin, who is carrying on advanced work at Technology. He has studied in detail the initial ground motions from a deep-focus earthquake, with the purpose of revealing any

effects of internal crustal reflections between layer boundaries which have been supposed to exist at depths of about 10 and 25 miles. The evidence, however, is not as convincing as might be desired, and practically no data have been obtained concerning the sharpness of the boundaries which have been thought to exist. Dr. Sharpe's study promises to lead to a powerful tool for studying crustal structure, and possesses the advantage that local structure may be deduced from seismograms of a single seismic station. Incidentally, the Institute's differential analyzer has performed valuable service in the deduction of the ground motions from the seismograph records.

Another kind of basic information about the behavior of the earth's crust has been obtained by N. A. Haskell, a Harvard graduate student who is doing geophysical research at Technology. Mr. Haskell has studied the slow yielding of the earth's crust under heavy loads of long duration. The best experimental data for such study appears to be found in connection with the plastic recoil of the earth after the melting of glacial ice caps of the recent glacial era. The melting of these ice caps, about 30,000 years ago, gives the geologist a rare opportunity to obtain data on an all-important question in geological mechanics. This question concerns yielding, or flow, of rocks over very long time intervals, under loads which are at least approximately known. The ice loads stand alone in their suitability for such a study.

After solving the viscous flow problem associated with this case Mr. Haskell has deduced from the observational data concerning the uplift of Fennoscandia after the ice load, a value of 10^{22} C.G.S. for viscosity of the deep rocks. His work appears to give the first straightforward, quantitative estimate which has been secured for this important property of the crustal rocks. As a by-product, the results seem to have direct application to the question of plastic, or elastic, settling of foundations in civil engineering.

Two other investigations of crustal properties are under way. The first concerns the electrical resistivity of deep rocks. A large-scale preliminary experiment in



Students in the geology laboratories

Illustrating the life history of a volcano

HIGHLIGHTS IN THIS SECTION: *There are jobs awaiting young geophysicists (319) — Moreland vice Jackson (320) — Faculty Promotions and Retirements (321, 322) — Transmutation in the Lecture Room (322) — Reports on the Department of English and History, and the School of Architecture (324, 350)*

central Massachusetts has been successfully completed. Knowledge of the variation of the electrical resistivity of the deep rocks should be valuable in establishing the identification of these rocks, and, among other uses, may well prove to be the key in determining temperatures at great depth. The possibility of utilizing electrical resistivity data as a thermometer follows from the marked sensitivity of the electrical resistivity of glass-like materials to temperature change.

A seismic project supported jointly by the Department of Geology and the Geological Society of America is also in progress. This has as its object the study of the elastic properties of the deep crustal rocks, and of the variation of these properties in the crust. Crustal transitions, either of the gradual or sharp type, will be sought. As a powerful source of seismic waves, large quarry explosions of as much as 100 tons of dynamite are available. By means of sensitive seismometers, the earth waves propagated from such explosions are observable out to distances of several hundred miles.

A series of portable seismometers are now being constructed which are especially adapted for the accurate observation of ground motions. These seismographs will be stationed at regular intervals from the explosion, and complete records of the ground motions at all distances thereby obtained. Such records would afford an ideal basis upon which to make an analysis of the elastic structure of the upper crust.

Opportunities in Geophysics

THE problem of replacing depleted sources of mineral wealth with new discoveries continues to afford greater and greater opportunity for the talents of the scientist and engineer. A moment's reflection about certain simple facts in the history of the exploitation of mineral resources and about the nature of the prospecting problem reveals the cogent causes which create the present emphatic demand for a new kind of technical skill in exploration work.

The era of the easy discovery of industrial minerals at the grass roots is at an end. Little or no virgin ground within reasonable distances of the markets remains unsearched by the old-fashioned prospector. Almost all the available outcrops have now been examined, and even entered on our geological maps, but rock exposures which may be examined by him who runs form less than one per cent of the area of mining districts. We have now reached the stage where the concealed 99% must be investigated to afford new sources of supply. For the economical prospecting of such areas, much more skillful detective work, and indeed, all the resources that science can bring to bear, are needed. We need a new type of exploration engineer who has at his command all the methods which science can teach for the prospecting of hidden mineral deposits. Any methods which bring results are fair; no holds are barred.

To supply the kind of fundamental training which the modern exploration engineer needs, a new option in geophysics, to be given under the direction of Professor Louis B. Slichter, will be offered at the Institute this autumn. The option provides equal emphasis upon four essential phases of the undergraduate's training.

First, there are the studies in the humanities, which this option provides in common with the other technical curricula at M.I.T. Second, systematic training in mathematics and theoretical physics will continue throughout the four years. Third, a similarly continuous training in fundamental geology is planned, and fourth, a suitable course in experimental science is provided through selected subjects in the Departments of Electrical Engineering and Physics.

Provision for electives, beginning with the first term of the second year, is made throughout the course. As a rule, only one subject from each of the last three categories mentioned above is carried at a time. An effort has been made to lighten the load upon the student, in order to give him "time to think."

The option is intended to impart an understanding of the fundamentals both of geology and of geophysical prospecting methods. It also serves as suitable prepara-

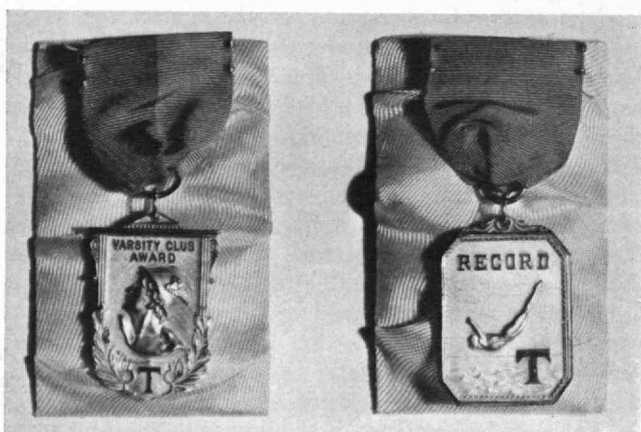
tion either for graduate specialization in exploration problems, or for graduate research in pure geophysics. At present, men well trained in the joint field of geology and geophysics are very rare indeed. During the last several years, numerous requests to the Institute for such men have gone unfilled simply because no suitable candidates have existed. It is hoped that the new option will be successful in supplying a type of professional man for whom there is a very real need in present-day exploration work.

Appointment of Moreland

THE appointment of Edward L. Moreland, '07, as Head of the Department of Electrical Engineering at the Institute was announced by Dr. Compton on April 9. Mr. Moreland, who is senior partner in the engineering firm of Jackson and Moreland, will succeed Professor Dugald C. Jackson, who retires next month.

In announcing the appointment, Dr. Compton said: "Mr. Moreland brings to the Department of Electrical Engineering a broad knowledge of engineering and a thorough understanding of educational requirements in a field in which he has had exceptionally wide experience. Although the future of the Electrical Engineering Department now becomes Mr. Moreland's primary interest, nevertheless he will continue his active affiliation as senior partner in the firm of Jackson and Moreland, thus maintaining a valuable relationship between technical education and the engineering profession."

Mr. Moreland is a native of Virginia and a graduate of Johns Hopkins University and of Technology, where he was awarded the degree of master of science in 1908. In 1913 he married Miss Francina H. Campbell of Owings Mills, Md., and their home is in Wellesley, Mass. Mr. Moreland has been active in civic affairs, and is chairman of the Wellesley Water and Municipal Light Commissioners and of the Sewer Commissioners.



Left: The new Varsity Club award which is given to the most valuable man each year on each team at Technology. Right: The Alumni Advisory Council on Athletics sponsors this new award for men who break existing records in swimming competitions. Already five medals have been awarded. At the March meeting of the Advisory Council on Athletics, Joseph L. Levis, '26, announced that the Varsity Club will sponsor awards for individual Institute championships in all sports at Technology. The Review for July will present a list of new records made by Technology athletes

He was born at Lexington, Va., in 1885, the son of Sidney T. and Sally Preston Moreland. His father for many years was Professor of Physics and Dean of Washington and Lee University, later becoming Professor of Physics and Dean of the pre-medical school of the University of Tennessee. Mr. Moreland received his early education at the McDonogh School of McDonogh, Md., where his father was principal for several years, and the Boys' Latin School of Baltimore. He received his bachelor of arts degree from Johns Hopkins University in 1905, coming directly to Technology for his advanced studies. Upon his graduation, he entered the Boston engineering firm of D. C. and William B. Jackson, which in 1919 became the firm of Jackson and Moreland, from which Professor Jackson retired in 1930. The members, in addition to Mr. Moreland, now are Frank M. Carhart, '05, and Ralph D. Booth, '20.

The firm has directed many important engineering projects, including electrification of the Great Northern Railway through the Cascades, and electrification of the suburban system of the Lackawanna Railroad. In 1911 the British Government called upon the firm to aid in the process of transferring the National Telephone Company to the jurisdiction of the British Post Office Department, an undertaking which presented many complex problems of valuation and legal adjustment. Mr. Moreland represented his firm in a considerable part of this work, which required nearly two years.

As consultants in a wide variety of engineering works, Mr. Moreland's firm has made many important investigations and directed many developments. Among these are numerous engineering studies for the Edison Electric Illuminating Company of Boston, the New York Edison Company, the Philadelphia Electric Company, and the New England Power Association. The firm has also done a large amount of work for public utility commissioners, municipalities, and other public bodies, including a study of the electrical characteristics of transmission lines and generating equipment for the Tennessee Valley Authority.

In the industrial field, Mr. Moreland has had wide experience in the development of both steam and electric power plants. The firm has contributed importantly to the solution of various complex problems of power development and heat control in the petroleum industry, particularly in connection with the efficient utilization of steam and generation of by-product power. It also made extensive studies on the development of power and its transmission in connection with the proposed Passamaquoddy tidal power project in northern Maine and other large projects in Canada and the United States.

During the War, Mr. Moreland served as Captain and later as Major of Engineers in the American Expeditionary Forces. After the armistice, he was appointed technical executive of the War Damage Board. He now holds the rank of Lieutenant Colonel in the Engineers Officers Reserves, and is acting chief of the Boston Power Zone.

Mr. Moreland has long been active in the Technology Alumni Association. From 1925 to 1930 he was a member of the Alumni Council, and he has served on various committees, including the Executive Committee, from

1926 to 1928 and from 1933 to date. In 1933 he was elected Vice-President of the Association, and, as sole nominee for President, will become its head this year.

As a Fellow of the American Institute of Electrical Engineers, Mr. Moreland has been active on many of its committees and is now Chairman of its Standards Committee. He is active in the American Standards Association, representing the American Institute of Electrical Engineers on the Standards Council, the Sectional Committee on Standardization of Mercury Arc Rectifiers, of which he is Chairman, and the American Advisory Committee to the International Electrotechnical Commission on Electric Traction Equipment. He also represents the American Society of Mechanical Engineers on the Sectional Committee on Standardization of Pipe Flanges and Fittings.

He is a Fellow of the American Academy of Arts and Sciences, and a member of the American Society of Civil Engineers, the Boston Society of Civil Engineers, and the American Society of Mechanical Engineers. His clubs are the Engineers in Boston and New York; the University Club, City Club, Braeburn Country Club, and Wellesley Country Club. He is a member of Phi Gamma Delta fraternity and the Phi Gamma Delta Club of New York.

68th Commencement

DR. ISAIAH BOWMAN, President-Elect of Johns Hopkins University and internationally known geographer, will deliver the Commencement address at the 68th graduation exercises of the Institute on June 4.

Dr. Bowman has long been distinguished for his contributions to the social and natural sciences and to the cause of world peace. He is Chairman of the National Research Council, Vice-Chairman of the Science Advisory Board, and since 1915 has been Director of the American Geographical Society. He was chosen last February to succeed Dr. Joseph S. Ames as President of Johns Hopkins University.

Promotions in the Faculty

THE appointment of Professor Henry B. Phillips as permanent Head of the Department of Mathematics at the Institute was announced by President Compton last month. Professor Phillips, who has been a member of the staff since 1907, has served as Acting Head of the Department since the retirement of Professor Emeritus Frederick S. Woods.

Dr. Compton also announced the promotion of Professors L. Magruder Passano and Nathan R. George of the Mathematics Department to full professorships. Professor Passano joined the Faculty in 1892, and Professor George has been a member of the staff since 1891. Professor Leicester F. Hamilton, '14, of the Department of Chemistry, becomes full Professor and Executive Officer in charge of undergraduate work in chemistry. Professor Robert E. Rogers is promoted to the rank of full Professor of English.

Promotions to the rank of Associate Professor include Professors Donald C. Stockbarger, '19, Julius A. Stratton, '23, and Hans Mueller, all of the Department of



The President-Elect of the Alumni Association, Edward L. Moreland, '07, who becomes Head of the Department of Electrical Engineering in June. See page 320

Physics; Professor Ernest H. Huntress, '20, of the Department of Chemistry; Professor B. Alden Thresher, '20, of the Department of Economics and Social Science; Professor Martin J. Buerger, '24, of the Department of Geology; Professor Frederick H. Norton, '18, of the Department of Mining and Metallurgy; Professor Hurd C. Willett of the Meteorological Division of the Department of Mechanical Engineering; Professors Karl L. Wildes, '22, and Louis F. Woodruff, '18, both of the Department of Electrical Engineering; and Professor James Holt, '18, of the Department of Mechanical Engineering.

Members of the staff promoted to the rank of Assistant Professor are Heinrich Peters and Charles S. Draper, '26, Aeronautical Engineering; Robert L. Hershey, '23, who was also appointed Director of the Chemical Engineering Practice School Station at Buffalo, N. Y.; Truman S. Gray, '28, Electrical Engineering; Nicholas A. Milas, Charles M. Wareham, '16, and Arthur R. Davis, Chemistry; Howard R. Bartlett, English; and Marshall W. Jennison, '27, Biology.

Promoted to the rank of Instructor were J. Ross McKeever, Architecture; Arthur E. Fitzgerald, '31, and Edward W. Kimbark, '33, Electrical Engineering; John K. Vennard, '30, and Herman G. Protze, Jr., '32, Mechanical Engineering; John L. Fuller, Biology; Robert R. Armstrong, Chemistry, and Harold A. Freeman, '31, Economics.

Charles L. Norton, Jr., '25, Instructor in the Department of Mining and Metallurgy, and a son of Professor Norton, '93, has resigned to accept a position with the Babcock and Wilcox Company.

Retirements

AFTER more than a quarter-century of notable service to the Institute, three members of the Faculty will retire at the end of the academic year. They are Professor Dugald C. Jackson, Head of the Department of Electrical Engineering; Professor Frederick H. Bailey, of the Department of Mathematics; and Charles E. Littlefield, '95, Instructor in the Department of Mechanical Engineering. Professor Bailey will retire as Professor Emeritus, and Dr. Jackson, as Professor Emeritus and Honorary Lecturer.

Professor Jackson was appointed Head of the Department of Electrical Engineering in 1907, coming here from the University of Wisconsin, where he had held a similar position. He is a native of Kennett Square, Pa., and was graduated in 1885 from Pennsylvania State College, where his father, Josiah Jackson, was Professor of Mathematics. Following two years of graduate study at Cornell, Professor Jackson spent several years in engineering work, where he gained the broad experience upon which his distinguished career as an educator was founded. In 1891 he became Head of the newly created Department of Electrical Engineering at Wisconsin, which, under his guidance, became widely known for the excellence of its instruction.

He early adopted as a basic educational principle the idea that students should be brought as soon as possible into contact with the unknown, thus stimulating them to think for themselves, instead of drilling into their memories the cut-and-dried principles of the textbooks. In addition to his early educational work, he found time to carry on research and to write several important textbooks.

He has held office in many, and is a member of more than a score of, engineering societies. In 1905 he was President of the Society for the Promotion of Engineering Education, and in 1910 was elected President of the American Institute of Electrical Engineers. In 1922 Professor Jackson, whose undergraduate education was in civil engineering, was elected President of the Boston Society of Civil Engineers, oldest engineering organization in the country. In 1932 Columbia University conferred upon him the honorary degree of doctor of science.

Professor Jackson's educational work at Technology has included the accomplishment of three major objectives, each of which initiated a broad following movement throughout American universities. The first of these was the establishment of an extensive program of undergraduate research in close alliance with undergraduate teaching. The second was the creation of a practical system of cooperative engineering education in which students alternate between periods of paid industrial work and scientific instruction at the Institute.

His third objective was the provision of a curriculum for exceptionally able students, free from the restrictions of rigid schedule of hours and strict adherence to textbooks. This plan, known as the honors system, has proved so successful that it is being extended to other fields. For his contributions to education, Professor Jackson was awarded the Lamme medal of the Society

for the Promotion of Engineering Education in 1931. His retirement at the end of the academic year coincides with the celebration of the 50th anniversary of the awarding of the first degree in electrical engineering at Technology.

Professor Bailey has been a member of the instructing staff of the Institute since 1891. He was born in Leominster, Mass., and received his early education in the public schools of Fitchburg. He was graduated from Harvard University in the class of 1887, and received the degree of master of arts there in 1889.

For the following two years he served as assistant instructor in mathematics at Harvard, and then came to Technology as an instructor. He was appointed Assistant Professor in 1893, Associate Professor in 1904, and Professor in 1907. He has been a member of the American Mathematical Society for many years, and, in collaboration with Professor Emeritus Frederick S. Woods, has written a number of mathematical texts.

Mr. Littlefield was born in Illinois of New England parents, who returned to make their home in Boston early in his youth. He was educated in the Boston public schools, graduating from the Roxbury High School in 1891. In the same year he entered Technology as a special student in the mechanic arts. Later he taught this subject in the public schools of Brookline for a year and then became an instructor in the Boston Farm and Trade School, where he remained until 1901. In the same year he joined the staff of Technology, where he has taught elementary and advanced machine work and production methods. He was long associated with the late Professor Robert H. Smith in the design of special machinery and in the writing of textbooks on machine work.

Sigma Xi Awards for Theses

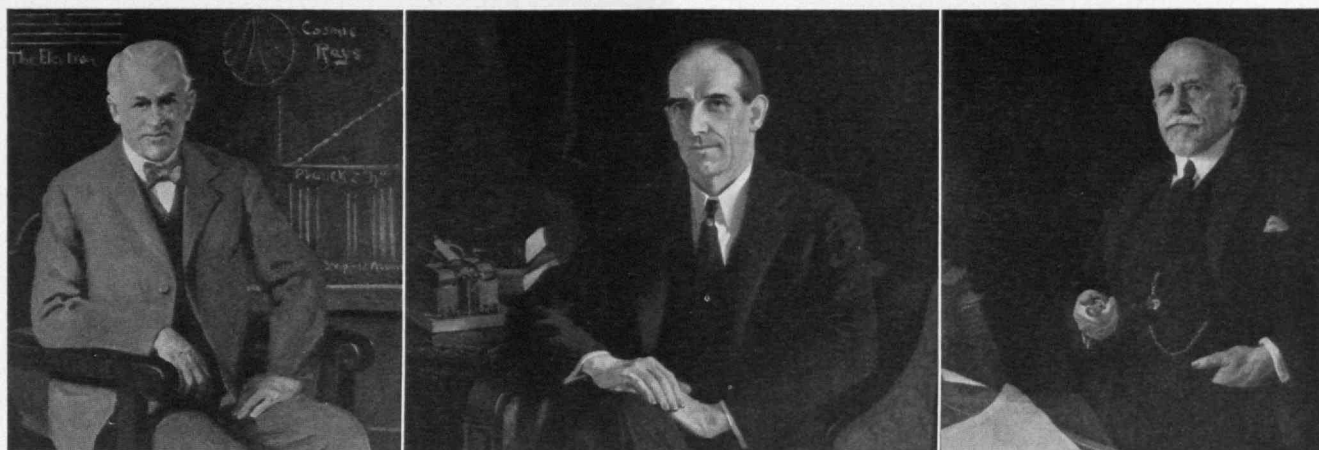
THE M.I.T. chapter of the Society of the Sigma Xi has announced the annual award of three prizes of \$50, \$30, and \$20 for the best undergraduate theses submitted for the bachelor of science degree at the Institute.

Theses will be judged on the basis of their importance to pure and applied scientific research, and the awards will be made at Commencement. Special departmental committees composed of Sigma Xi members will select outstanding theses and present them to a prize committee for final judgment.

Silver to Cadmium

TRANSMUTATION of the atoms of silver into cadmium by means of artificial radioactivity was demonstrated for the first time in public by Professor Robert J. Van de Graaff, of the Department of Physics, in the concluding Society of Arts lecture in March. Discarding conventional lecture-room experiments, Dr. Van de Graaff successfully performed some of the most delicate and complex laboratory experiments of modern science.

In his transmutation of elements, the speaker produced artificial radioactivity by radium emanation. Alpha particles from this emanation were made to



Juley

The Institute receives the second group of a series of portraits presented by Mr. and Mrs. Henry A. Wise Wood and painted by Margaret Fitzhugh Browne. Left to Right: Robert A. Millikan, physicist, of Caltech; Frederick G. Cottrell, chemist and inventor, and for many years Director of the Fixed Nitrogen Laboratory in Washington; and the late John R. Freeman, '76, distinguished civil engineer, insurance executive, and Life Member of the Corporation

strike the metallic element, beryllium, causing it to emit neutrons, which, upon striking silver, caused the latter to become artificially radioactive. About 20 seconds after these infinitesimal flying particles had bombarded the silver atoms, some of them spontaneously shot out an electron, thus transmuting themselves into cadmium.

Evidence of the transmutation was both visible and audible. The flying atomic particles, moving at a speed of more than 100,000 miles a second, were shown by means of the Geiger counter, which amplified the atomic explosions millions of times to make them clearly audible. The energy involved in the transmutation was millions of times as great per atom as that for each atom of nitroglycerine in an explosion. The experiment was based on investigations by the Italian scientist, Professor Enrico Fermi.

Drawing and the Machine

TO ASSIST students of mechanical drawing to visualize actual machine operations, an educational film, entitled "The Graphic Representation of Machine Operations," has been produced by the Institute's Division of Visual Education.

The picture was made in cooperation with members of the drawing staff, and shows in detail the performance by a machinist of various fundamental operations called for in a specific mechanical drawing. It illustrates drilling, tapping, boring, counterboring, and countersinking, as well as lathe and hand work, the work of the planer and gear cutter, and external and internal thread cutting, both on the lathe and in the thread-cutting machine.

Balloons Over St. Louis

A FLOCK of 36 small sounding balloons, each carrying a sensitive instrument for recording atmospheric conditions, took off from Lambert Field Airport in St. Louis last month in Technology's third study of stratosphere weather. Each instrument, encased in a shock-absorbent frame, carried an identification label offering a reward for its safe return to the Institute.

Following a similar flight last November, 29 of the 35 balloons released were found and returned by residents within a radius of 100 miles around St. Louis. In view of the more favorable season, Technology's meteorologists hope last month's tests will yield an even greater proportion.

While the data obtained in the two previous investigations is still being studied, several interesting observations have been made concerning the stratosphere, that layer of the atmosphere where temperature no longer decreases with height. At the base of the stratosphere over St. Louis last November, extraordinary fluctuations of temperature, ranging from 36° below zero Fahrenheit to 78° below, were recorded. The base of the stratosphere itself was found to vary greatly in height, shifting suddenly from 25,000 to 40,000 feet above the earth.

Designer Burgess

W. STARLING BURGESS, distinguished designer of *Enterprise* and *Rainbow*, the successful defenders of the America's Cup in the last two international yacht races, discussed recent developments in sailing yacht design in two lectures at the Institute in March.

Mr. Burgess, who is also well known for his work in the design of aircraft and automobiles, traced the history of the America's Cup races and commented on the influence of design rules on the actual development of the various contenders. He illustrated his addresses with lantern slides and spectacular motion pictures of the races between the *Endeavour* and the *Rainbow*.

Twelfth Open House

STRIKING developments in science and engineering will be exhibited at the Institute's twelfth annual Open House on May 4. As in the past, the program has been arranged by the Combined Student Professional Societies, and will include unusually interesting activities by professional and extracurricular groups.

All laboratories of the Institute will be open for public inspection from two until ten o'clock. A track meet will be held, crew races will take place over the new

courses on the Charles River Basin, and guests will observe the Technique Rush from the discreet distance of the new steel bleachers. In Walker Memorial, staff members of various student activities will hold open house in their offices, the Combined Musical Clubs will give a concert, and there will be a tea dance.

Corporation Visiting Committee Reports

BELOW is a condensation of the Visiting Committee Reports of the Department of English and History and of the School of Architecture recently presented to the Corporation of the Institute and published here as part of a series now appearing.

REPORT OF THE VISITING COMMITTEE OF THE DEPARTMENT OF ENGLISH AND HISTORY*

IN A SERIES of conferences on January 8 and 9, the Committee met with members of the departmental staff to review the work of the Department *per se*, and the coöperative efforts of the Department with the professional Courses.

On the first day a plan was followed which enabled the meeting of the Committee to take the form of a hearing at which all members of the staff of the Department of English and History appeared before the Committee, in sanctuary, to discuss the objectives, the problems, and the conduct of the Department. The Committee is happy to report that this form of meeting proved extraordinarily successful, and that the results were beneficial not only to the Committee but, it believes, to the Department of English and History.

Conferences were held the following day with the department heads in which the service functions of the Department of English and History were discussed with particular emphasis on the coöperative instruction in English during the latter years of the Courses. The Committee was much impressed by the extent of interdepartmental and intradepartmental coöperation of the staffs, the qualifications of the teachers, and, particularly, the very fine personal manner in which the Department Head has cultivated a unity of enthusiasm and sincerity in their efforts. . . .

We are including in this Report only the more general recommendations which seem to us to constitute an advanced objective, possible of achievement through the evolutionary development of basic policies and subjects now in existence. In brief, it deals with the scope and objective of the work of the Department, admission problems, subjects, and Courses, their coördination and unification, and certain administrative matters associated therewith.

It might seem that the Committee has gone beyond its province in the discussion of certain factors which pertain more specifically to other Departments. In every instance, however, the Committee believes that these elements have a direct bearing upon the efficient development and progress of the Department.

* The Committee which made the above report consisted of: Payson Smith, E. P. Brooks, '17, W. D. Connor, A. Farwell Bemis, '93, R. I. Rees, D. G. Robbins, '07, J. R. Killian, Jr., '26, and F. J. Chesterman, '05, Chairman.

Scope and Objectives

It is the opinion of the Committee that the functions of the Department of English and History must be considered in connection with the mission and function of the Institute. In an institution predominantly technical, the Department may rightly be looked upon as a service organization.

If we consider language as an instrument whose function is to facilitate the rapid, intelligible, and reproducible interchange of ideas through the use of words, then it is eminently desirable that it should be employed with facility and accuracy. Looseness and slovenliness in the use of language, being inefficient, should no more be tolerated than careless formulation or solution of a scientific problem. This is a matter of special importance at schools such as the M.I.T., where an effort is made to train men to fill important positions in their professions and communities. Knowledge of technical principles and processes is not enough. The engineer or scientist must be able to communicate with the entire body of the social structure, in language readily understood by everyone; otherwise his usefulness is considerably impaired and, with it, the chances of his own success.

The increasing importance of the engineer and scientist in the ordering of our government and society is apparent. Society, therefore, has the right to demand that these men possess a broad knowledge of social and human needs as well as the specialized information of their chosen professions. Teachers of the social sciences at the Institute must, therefore, inculcate in their students a lively sense of this fact, its implications, and the responsibility thereby imposed upon men of science.

The dual objectives to be achieved are, therefore, to develop in students a proficiency in the oral and written expression of clear, sound, and logical thinking, and to assist in their acquisition of the knowledge and habits of mind necessary to culture.

The latter objective goes beyond the scope of what may be expected of the Department. Of necessity it includes instruction in economics and social sciences and some of the subjects now listed as General Studies. This instruction should be so conducted as to afford a maximum of drill in the technique of writing and speaking, cultivate the habit of reading, and provide intellectual stimulation in the field of social knowledge.

Admission Practices

Evidence submitted to the Committee indicates a need for more careful scrutiny of the qualifications of applicants in written and oral expression. It appears that the acceptance of the College Entrance Board examinations in English is not wholly satisfactory. There are too many students at the Institute who are deficient in the use of the English language. This deficiency may be ascribed to one of two things: either too little emphasis is placed on accuracy of expression in secondary schools, or the Institute is admitting a group of students who have been allowed to slight courses in English because of their predominant technical inclination and, as a result, are not qualified to enter. (Continued on page 346)

Century

MOTORS



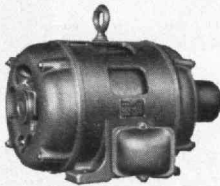
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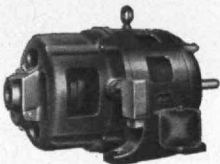


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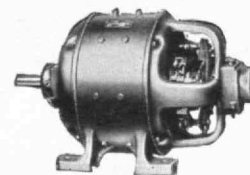


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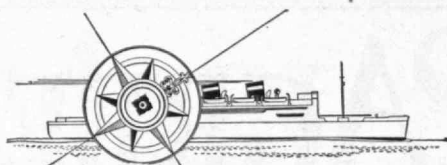
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LITERARY ENGINEERS

(Continued from page 314)

National Conference of City Planning, and the National Conference of Social Work.

Another active laborer in the literary vineyard bordered by technology and the humanities is William Beard, '28. His first appearance as an author was by virtue of the publication of a report on the cost of school-building construction for the New York State Legislature. Collaboration with his distinguished father, Charles A. Beard in writing "The American Leviathan" brought him early recognition as an authority on government. At the California Institute of Technology he organized a course in government to fit the peculiar needs of technical men, and ultimately published the material in a book, "Government and Technology." Much of Mr. Beard's interest in the art of writing derives from his father; his own success is attributable, in his own words, to "being inspired by a great teacher (at home, not at M.I.T.)."

An undergraduate contemporary with Beard was Parker Morell, listed with the Class of 1929. A single best-seller has recently elevated his name to literary prominence, after a period of relative obscurity as a free lancer of short stories and Hollywood scenarios. "Diamond Jim Brady," a study of the life and times of James Buchanan Brady and his dazzling confreres of the "Naughty Noughties" was for several weeks on the Old Corner Bookstore's list of high-liners in non-fiction. Morell's contact with the Brady material came through his family's jewelry business, in which he was engaged. Following up the good Brady work, he is now occupied with the preparation of another biographical study, Elizabeth Marbury, the dramatic agent.

A popular play in Boston and New York this past season has been "Petticoat Fever," starring Dennis King. Considerable surprise was evoked when an enterprising reporter for *The Tech* discovered that the author was Mark Reed, a 1913 student of architecture at the Institute. Designing bathrooms for a New York hospital did not seem the fullest possible self-expression and Mr. Reed eventually enrolled in Professor Baker's "47 Workshop" at Harvard. "She Would and She Did" and "The Sky Rocket" were two successful Broadway productions prior to "Petticoat Fever." Dudley B. Murphy, '19, is a writer of cinema scripts and a director.

In editorial work, a few representative names will show the prominence of Technological men in this middle ground between the technical and the literary. Charles H. Heustis, '76, associate editor of the *Philadelphia Inquirer*, is the dean. Perhaps the most prolific writer and editor among them is Dr. James A. Tobey, '15, author of some 400 articles in popular and scientific magazines, the "Dictionary of American Biography," and the "Encyclopædia Britannica." Nine books and two monographs have had a total distribution of over 100,000 copies. Modestly he assumed a *nom de plume* for a detective novel, published not long ago by Knopf. Since 1928, prior to which he served editorially on *American Journal of Public Health*, *Natural Health Council Digest*, and *American City Magazine*, he has been editor of the *Borden Digest*.

A. Lawrence Kocher, '13, has been, since 1927, editor of *The Architectural Record*. He has likewise been engaged in writings related to planning and new construction methods. As does Dr. Tobey, (Continued on page 330)

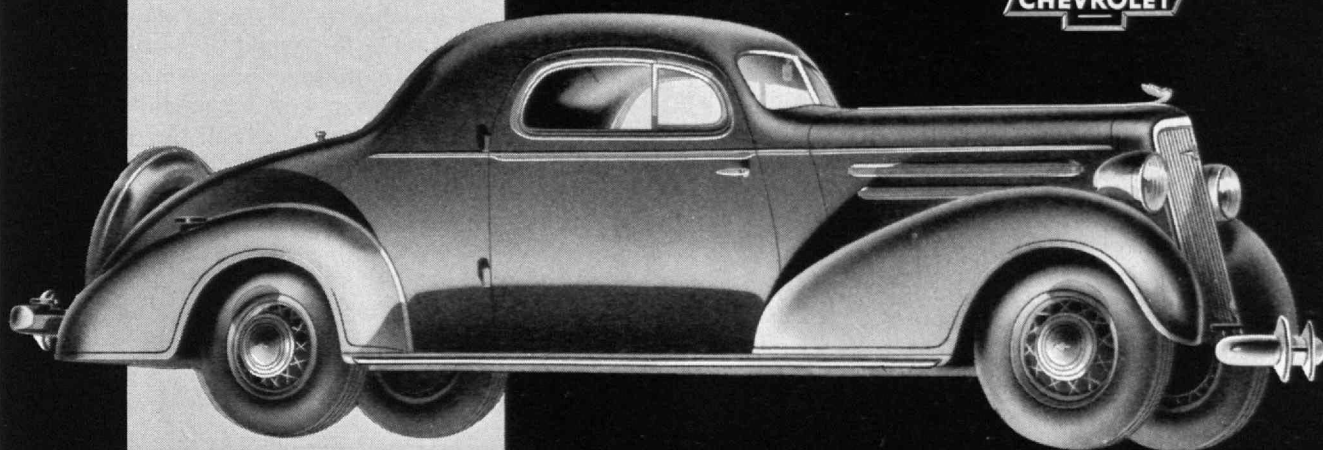
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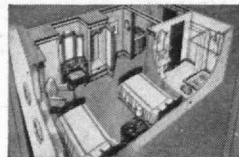
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LITERARY ENGINEERS

(Continued from page 328)

Mr. Kocher speaks warmly of the inspiration in literary work derived as an undergraduate from the late Professor Arlo Bates. Likewise engaged in the editorial work in architecture is Kenneth Ried, '18, associate editor of *Pencil Points*; while Donald Fink, '33, has been on the editorial staff of *Electronics* since his graduation.

A prodigious editorial task was successfully handled by John H. Ruckman, '10, in the compilation of a 747-page volume, "Technology's War Record." When this book appeared in 1920 it was the first complete record published by any college of the contributions of its men to the cause of the United States in the World War, and it has never been surpassed in thoroughness and completeness by any subsequent publications.

On the staff of *Aviation* are two Technology graduates and, by the way, former faculty members. Edward P. Warner, '17, vice-chairman of the late Federal Aviation Commission, has been editor since 1929, and Daniel C. Sayre, '24, is associate editor. Eric Hodgins, '22, on the staff of *Fortune*, and formerly Managing Editor of *The Review*, was also on the instructing staff at the Institute, but gave up talking about writing, as a part-time member of the English Department, in favor of writing. These men give some weight to Bernard Shaw's sardonic remark that "Those who can, do; those who can't, teach."

Another renegade teacher is John E. Burchard, '23, who collaborated with Albert Farwell Bemis, '93, in Volume I of "The Evolving House," "A History of the Home," published in 1933. Mr. Bemis' second volume, "The Economics of Shelter," appeared last year. Mr. Burchard has done articles for the *Sportsman* and the *Architectural Forum* as well as his much-discussed articles in *The Review*.

As to what makes all these engineers write, Burchard draws the general conclusion that it is what makes anybody else write; namely: "(a) the fact of actually having something to say that he feels ought to be said; (b) being paid for the writing; (c) the indefinite glamour and satisfaction that come of being a writer or doing anything else exhibitionistic; (d) (and nearly all the other letters of the alphabet) something indefinable, having to do with pride and self gratification, and with personal advancement due to obtaining a reputation as a coming young thinker—something else that cannot be described at all."

Professor C.-E. A. Winslow, '98, whose active work in the Yale School of Medicine and numerous publications happily give the lie to Mr. Shaw's sour epigram, has something further to say (*Concluded on page 332*)

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LITERARY ENGINEERS

(Concluded from page 330)

on the same subject, particularly the value of an engineering training to the creative writer: "There are at least three more or less distinct elements involved in good writing. First of all, I should put intellectual clarity, for in most creative literature and all non-creative literature the conveyance of thought is involved, and the conveyance of thought depends upon the possession of thought, in clear and logical form. I cannot but feel that this factor in style must to a considerable extent be cultivated by engineering training, and ought to be a distinct characteristic of the literary compositions of our graduates."

But generalization and analysis are difficult, despite the impulse to derive a formula for determining, accurately and in the proper units, the magnitude of the force which has impelled some renegade scientists into the field where grazes the Purple Cow of literature. Such an attempt is beyond the scope of this undertaking, and outside the limits of our measurements. We have a fact—that certain Technology alumni have found their undergraduate training no barrier, even of assistance, in following literary careers—beyond that demonstrable fact, like Rossetti

"I can not tell you how it was;
But this I know: it came to pass."

EFFICIENCY IN FICTION

(Continued from page 309)

best illustrate this deistic method of narration. We are conscious through their books of an omnipresent, omniscient genius towering or pulling strings. In Brobdingnag, however, the Gulliver author is small and insignificant. He tends to disappear modestly behind his characters. The best examples of this, the ancient method of story telling, are in the Bible, where sincerity, simplicity, and naïveté create a spell that makes the reader forget that they are recorded by an author.

And so when art began a new lease of life, fiction took these two roads. The writers faring to Lilliput became intensely subjective. It was the Dadaists who led. Gertrude Stein has what is called an infantile complex. One may hear, any day, children learning to talk, playing with words, and repeating them in exactly the same permutative and rhythmical way. But children do learn, at last, to talk. Unfortunately, like those persons who have what is known as a "number sequence" or those who see letters and names as colored—who tell you that A is red and B is yellow—there is no bridge from Dada-Stein minds to ours. Their strange (to us) expressions may be (to them) sincere and pregnant; but they are as incommunicable as dreams or the talk of lunatics, so can have no logical validity or æsthetic quality.

Those writers, however, who made for Brobdingnag have much to tell, for they have adopted the Nudist technique. Such writers as Sherwood Anderson, Ernest Hemingway, and Julian Green rely upon the flesh and blood of their stories for literary values. I believe thoroughly in this Nudist view of (Continued on page 334)

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EFFICIENCY IN FICTION

(Continued from page 332)

Fire
 Marine
 Automobile
 Aircraft Damage
 Earthquake
 Explosion
 Rain
 Rents
 Riot and Civil Commotion
 Smoke
 Sprinkler Leakage
 Tornado
 Use and Occupancy
 Annual Transit
 Deferred Payment
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fiction. I believe (at present, at least) that the characters in a story should define themselves by their own talk and action, almost as in a play. I believe that it is as impertinent and gratuitous for an author to over-describe and analyze his characters as it would be for a stage manager to walk upon the scene during the performance of a play and tell the audience his opinions of the *dramatis personæ*.

The test, it seems to me, is, virtually, whether or not the narration is conversational and colloquial. Is it the candid way John would tell Jennie of a happening? Of course, it must be an intelligent John, a charming John, a John who knows the value of suggestion, selection, and dramatic effect. But, to be sincere, he must only report. He must not interpret. An absurd value has been placed upon this high-brow psychologizing, and I think that almost any 15-year-old girl is quite as qualified to discuss her motives and emotions as are most of these "literary" novelists who are photographed in thoughtful poses, feeling of their faces.

I remember how hard Jack London used to work at his stories. He not only had his butcher's bills pinned up over his desk to spur him on, but he had nailed onto the door of his study long lists of words so that he couldn't come in or go out without learning a new one. Nudism demands far harder toil than that. You have to prove things not by polysyllabic and Dude words, but by digging ever deeper into your imagination. Jack could think; and if he had felt free to shed a lot of those old literary garments he considered so necessary, I'm sure he would have been still more famous.

THERE is another way of looking at fiction writing. We are living in a Machine Age, and may learn from the machine. The paramount virtue of a machine is efficiency. That efficiency has, of itself alone, created a new form of beauty. One sees this not only in the streamline airplane and automobile, but, since economy is the corollary of efficiency, this new, scientific beauty is found in every modern instrument where the means are perfectly adapted to the end, and the minimum of material is used with the maximum effect. So, astronomical and laboratory instruments are beautiful, radio receiving sets, dynamos, printing presses, cigar lighters, and even dental instruments. Modern office architecture constructs housing machines; and the best description I ever heard of their emotional quality was given by a friend whom I accompanied on a first trip to New York. He said, "You know, Gelett, when I look up at those tall skyscrapers, I wish they were ten times as tall!"

Now, efficiency in fiction is the power to interest. That is the essential. How are writers to achieve this efficiency, to create a spell without which a book is tossed aside and the reader goes to dinner or to sleep? It must be done in the same way as the machine acquires efficiency — by creating the maximum of power with the minimum of material and labor. And what does this mean but the adoption of Nudism: a process of simplicity, sincerity, originality, and naïveté?

It seems to me that the most (Continued on page 336)

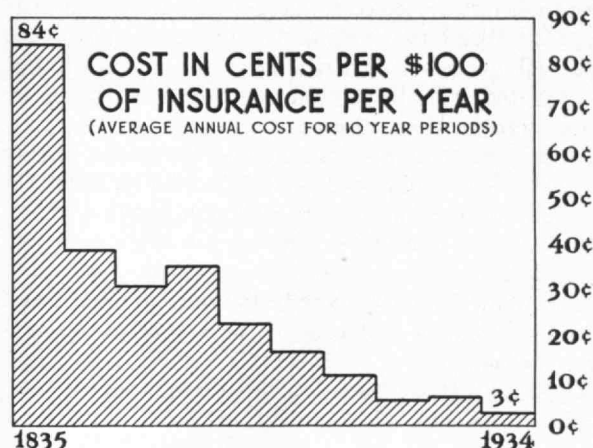
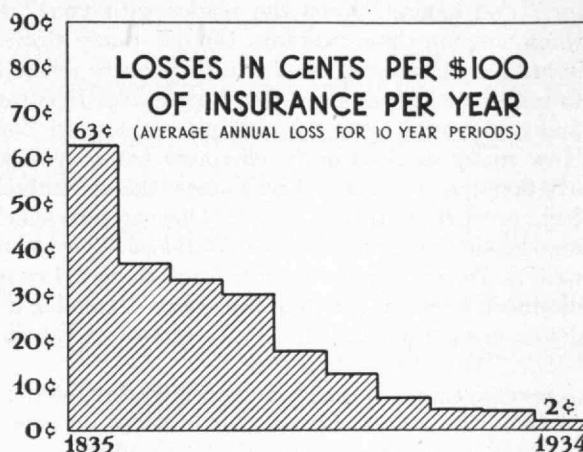
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EFFICIENCY IN FICTION

(Continued from page 334)

concentrated form of literary efficiency, the power to interest, is found in the detective, or mystery, story because the interest is focused upon a single problem: "Who Killed Cock Robin?" And so, it was with a detective story that I began first to experiment in this Nudist technique.

The main fault of the literary Nudists, so far, I think, is similar to the chief objection to physical nudity. Just as men and women are uninteresting when fat, drunk, dirty, or diseased, much of the advance-guard fiction is unsatisfactory because of the ugliness of its characters. The writers have virility, but few have a story to tell worthy their untrammelled frankness; and they, one and all, appear to think that only debased types are what the French call *livresque*, or writable. Why shouldn't the same liberated style be possible with interesting, even with aristocratic, characters?

We surely need more vitamins and hormones to resuscitate the old senile methods. It seems to me that slang, profanity, and obscenity, although justified when inevitable to plot and characters, are too often resorted to by ambitious young writers to cover up weak and lazy invention. They endeavor to simulate vividness by the mere shock of a violation of the sex taboos. Such methods are analogous to the exclamatory, terrifying war paint and tattoo of savages. They are a sensational literary costume which is, after all, only a neo-Dudism;

which is, in short, the same old self-consciousness. Instead of saying "I am pretty," they say, "I am awful."

I wanted to write what I call a "hot" story. Most detective tales are merely cold intellectual problems. A "hot" story would engage one's emotions as well as one's mind. Other things being equal, a story told in the first person gives the maximum of efficiency, because it is more credible. Julian Green says he first noticed this when he reread "Robinson Crusoe," which begins, "I was born in Boston in the year 1684." Unless the author is a natural bore or pedant, this method alone automatically enforces the Nudist virtues of simplicity, sincerity, originality, and naïveté.

Booth Tarkington long ago prevised this honesty when he said, "If they ever catch me writing, I'm done for," and again, "Keep the reader with you!" Even when obeying these cautions, though, many stories err in ordinary clearness. One frequently has to reread even to make sure which character is speaking. It is rare to find a writer who can properly place the word "only." How many books run for chapters before you know whether the scene is laid in Kamckatka or Santaclaus, Ind., or whether in 1492 or 1935! One can blue pencil innumerable useless words in the works of the best-known writers. How many are deficient in economy. How many diminish force by too long sentences. I wonder if students, now, study that little masterpiece of Edwin Abbott's, "How to Write Clearly."

Several things the new writers have taught us: that probably no reader ever goes (Continued on page 338)

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EFFICIENCY IN FICTION

(Continued from page 336)

through descriptions of scenery, and that one can paint a perfectly adequate portrait of a character in 20 words. All the rest is inevitably skipped by the reader. The time has gone by, also, for literary interior decorators, furnishing a room with endless details like the items of a laundry list: "Opposite the window was a large, red davenport, and beside it, two Chippendale chairs." No, Jennie never described a room that way to John.

THERE is another more definite technical aid I have received from the machine. We are enjoying a new art, that of the cinema. It has developed new and ingenious ways of telling a story and these methods are often adaptable to literary construction. One can, for instance, parallel its shorthand of suggestion. In a movie, a man pops into a taxi, a woman begins to undress, and our own imagination carries the action along. Writers have always used the "flash back," they have "irised" in and out, but they could learn much of the effectiveness of chaptering (even the best writers have a way of breaking off and beginning anywhere) by a study of movie "sequences." Above all, the cinema has perfected the art of accentuation, and that is what most efficiently maintains interest.

What, then, in fiction corresponds to the close-up? Alas, fiction, for the most part, is too full of close-ups. That's why — without knowing why — we are bored. Let me illustrate:

John and Jennie were sitting on the sofa.

"I say," said Jennie, "you know Mary?"

"Sure," said John, "what about her?"

Jennie said, "Why, she has a little white lamb, and everywhere Mary goes the lamb goes, too."

That is a close-up — direct dialogue. Now, what shall we do if we wish to lighten the scene, to make it less important? The movie director would probably call for a long shot. What is that in fiction? It is accomplished by indirection, thus:

John and Jennie were sitting on the sofa and Jennie told John about Mary's little lamb. Its fleece was white as snow, she said, and so on.

You see how much lighter the scene is? Still more weight may be taken from it by the use of the past participle: "After Jennie had told John," and so on; or by mere spacial transference: "In the next room they heard Jennie telling John that Mary" (Concluded on page 340)

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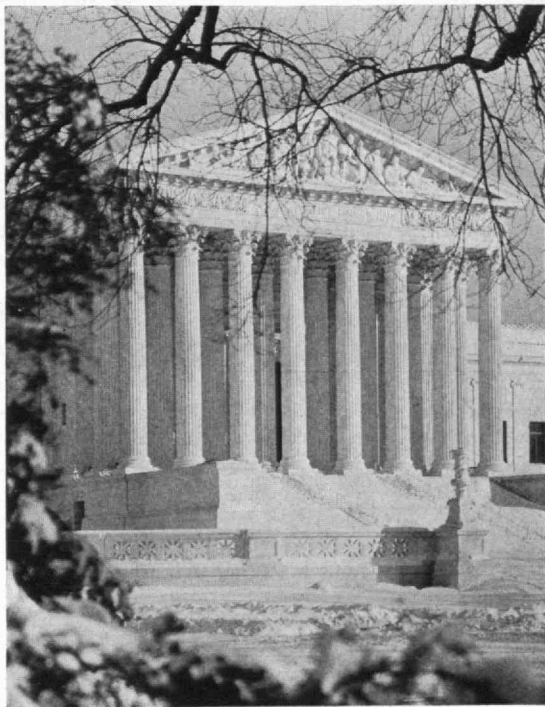
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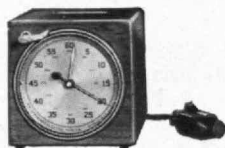
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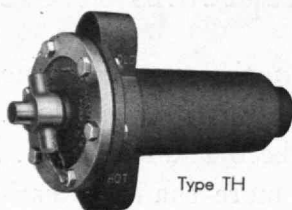
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EFFICIENCY IN FICTION

(Concluded from page 338)

and so on. Telling it over a telephone or by a letter also lightens the effect.

In the movies such changes of perspective are incessant. In a novel they should also be continually used to maintain interest. Many books fail through monotony of style. Accent is as necessary in fiction as in music. The important thing is stressed, the minor events lessened, like this:

"I will give you \$1,000 to destroy the will," he said. Then he told her he would give her till the next day to decide, and added, "Lulu will get the money she deserves, you know."

These are merely a few of the tricks one may learn from the cinema. It is possible to use many of the new "camera angles" in fiction and many of the new methods of suggestion with which the screen abounds. The old fiction was like painting. It delighted in rhetorical hues, misty psychology, and blurred realities. Modern story telling is photographic and phonographic, yes; but it is selective as is the movie. And that's what makes it art. Mere narrative technique will never replace inspiration, but it should fortify it. Fiction writing, especially that of mystery stories, is like the art of warfare. Any soldier can learn tactics, and any writer rhetoric. But plot-invention is like strategy, and for that there are no rules. It demands a special talent.

Most classics are mummies. They have had their day, expressed their epoch, but most of them are swathed in Dudist phraseology, ornamented with talismanic words, jeweled, sparkling adjectives, highly colored adverbs, perfumed with aromatic metaphors and ritualistic traditions of form. Whenever I see a classic, once famous, now bound in half calf, unread upon the shelf, I always think of Harris Dickson's story of his negro stable boy. After having seen a circus for the first time, all he could say of its pomp and splendor, its thrills, freaks, wonder, and derring do, was, "Massa Harris, dat yere elephant, he sure got a noble smell!"

Modern fiction has no such odor of sanctity. To literary Tories and Dudes it seems brutal, primitive, juvenile, bald. But a lively sap runs in its veins. When all reviews agreed that my novel, "Two O'Clock Courage" held the interest to the end, I felt sure that the Nudist technique is the most efficient, not only for detective stories, but for all fiction. Therefore, until I find a better, I shall forget all I ever learned of literary idols and cabala, and strive for simplicity, sincerity, originality, and naïveté.

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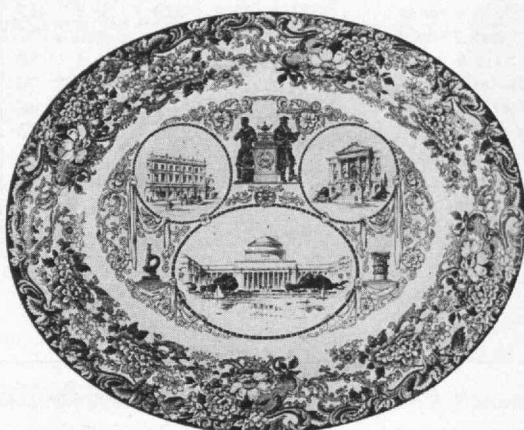
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SCHOLARSHIP AND DISTINCTION

(Concluded from page 306)

TABLE VI
Distribution by Professions

Fields	"Who's Who in America"		"Who's Who in Engineering"		"American Men of Science"	
	No.	%	No.	%	No.	%
ENGINEERING						
Aeronautics	7	1.6	10	1.3	3	0.6
Architecture	69	15.6	20	2.5	1	0.2
Building Construction	5	1.1	6	0.8	0	0.0
Chemical Engineering	9	2.4	35	4.4	44	8.5
Civil Engineering	48	10.8	190	23.8	53	10.3
Electrical Engineering	45	10.2	151	19.0	59	11.4
Electro-Chemical Engineering	0	0.0	10	1.3	9	1.7
Mechanical Engineering	41	9.3	164	20.5	43	8.3
Mining Engineering	24	5.4	65	8.2	22	4.3
Naval Architecture	11	2.5	13	1.6	4	0.8
Sanitary Engineering	19	4.3	30	3.7	18	3.5
SCIENTIFIC						
Astronomy	4	0.9	0	0.0	3	0.6
Biology	15	3.4	4	0.5	29	5.6
Chemistry	20	4.5	15	1.9	91	17.7
Economics	11	2.5	3	0.4	2	0.4
Geology	9	2.4	14	1.8	25	4.9
Mathematics	1	0.2	0	0.0	6	1.2
Metallurgy	8	1.8	14	1.8	18	3.5
Physics	13	2.9	9	1.3	48	9.3
Zoölogy	2	0.5	0	0.0	2	0.4
Miscellaneous	81	18.3	42	5.3	35	6.8
Totals	442	100.0	795	100.0	515	100.0

TABLE VII
Distribution by Functional Activities

Activities	"Who's Who in America"		"Who's Who in Engineering"		"American Men of Science"	
	No.	%	No.	%	No.	%
Consulting	114	25.8	196	24.6	62	12.0
Design	8	1.8	14	1.8	0	0.0
Education	104	23.6	132	16.6	237	46.1
Executive	179	40.5	337	42.4	132	25.6
Finance	8	1.8	22	2.8	4	0.8
Research	39	8.8	81	10.2	102	19.8
Sales	0	0.0	15	1.9	0	0.0
Editorial	20	4.5	8	1.0	4	0.8
Technical expert	54	12.2	203	25.5	91	17.7
Military	6	1.4	15	1.9	2	0.4
Arts	8	1.8	1	0.1	0	0.0
Law	3	0.7	3	0.4	1	0.2
Medicine	7	1.6	0	0.0	14	2.7
Ministry	2	0.4	2	0.3	0	0.0
Politics	10	2.3	4	0.5	0	0.0
Director	49	11.1	44	5.5	9	1.7
President	88	19.9	73	9.2	16	3.1
Vice-President	36	8.1	58	7.3	20	3.9
Chairman of Board	23	5.2	3	0.4	0	0.0
Member of firm	81	18.4	101	12.7	27	5.2
Treasurer	6	1.4	19	2.4	4	0.8
Inventor	30	6.8	145	18.2	49	9.5
Married twice or more	45	10.2	46	5.8	32	6.2
Manufacturing	70	15.8	153	19.2	59	11.5
Public utilities	31	7.0	90	11.3	19	3.7
Contracting	1	0.2	22	2.8	0	0.0

In contemplating the record of degrees earned (Tables VIII and IX), it is necessary to keep in mind that only 39.3% of the total registration at Technology have received undergraduate degrees. Here, as in the previous table, there are men who have been counted twice, or even three times.

TABLE VIII
M.I.T. Degrees

M.I.T. Degrees	"Who's Who in America"		"Who's Who in Engineering"		"American Men of Science"	
	No.	%	No.	%	No.	%
1 year only	33	7.5	8	1.0	5	1.0
2 years only	36	7.9	20	2.5	4	0.8
3 years only	30	6.8	29	3.6	10	1.9
4 years — no degree	22	5.0	28	3.5	7	1.4
B.S. in 4 years	234	53.1	629	79.2	417	81.0
5 years — no degree	6	1.4	10	1.3	1	0.2
B.S. in 5 years	14	3.2	35	4.4	33	6.4
Master's degree	18	4.1	40	5.0	70	13.6
Doctor's degree	19	4.3	14	1.8	48	9.3
Special student	42	9.5	30	3.8	35	6.8
Graduate work — no degree	8	1.8	5	0.6	7	1.4
Transfer from M.I.T.	115	26.1	118	14.9	177	34.4
Transfer to M.I.T.	123	27.8	267	33.6	134	26.0

TABLE IX
Degrees from Other Colleges

Other College Degrees	"Who's Who in America"		"Who's Who in Engineering"		"American Men of Science"	
	No.	%	No.	%	No.	%
A.B.	68	15.4	120	15.1	71	13.8
M.A.	24	5.4	28	3.5	42	8.2
B.S.	31	7.0	91	11.4	43	8.3
M.S.	10	2.3	29	3.6	38	7.4
Doctorate	45	10.2	28	3.5	116	22.5
Law	4	0.9	6	0.8	4	0.8
Medicine	6	1.4	0	0.0	16	3.1
Ministry	2	0.5	0	0.0	0	0.0
West Point or Annapolis	8	1.8	8	1.0	4	0.8
European study	70	15.9	44	5.5	66	12.8

But the most significant thing in the entire study is the last decile shown on Table I. Beyond dispute there is a large group of students who, with a perverse and tactless mockery, live lives rich in influence and achievement despite their failure in college. After the stuttering explanations which betray one's surprise have subsided, one begins to have an uneasy notion that if the object of college is better to fit men for intelligent living and not merely to instill a certain body of data, such things as personal appearance and the gentle art of human relations are factors of immense importance.

It is not going beyond the bounds of temperate statement to say that a grade in personal neatness, ability to coöperate, attitude toward suggestions and corrections, self-control, enthusiasm, courtesy, punctuality, reliability, or ability to work without supervision may be fully as important as a grade in calculus, geology, or quantitative analysis. He who teaches the subject and not the student is evidently doing only half his job.

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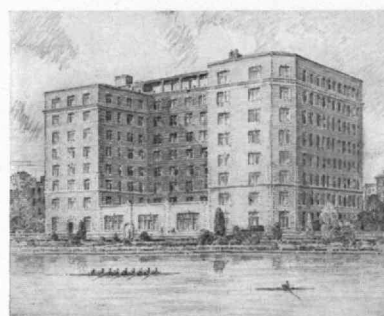
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THE STUDENT AGITATOR

(Continued from page 312)

by the excellence of their intentions and the purity of their faith, but by their success in handling situations of undreamed-of complexity. Their temperament cannot be the temperament of the agitator, for in the moment they assume power, agitation will become counter-revolution. In any successful reorganization of society, these men form the staff officers, the technical corps. The agitators may be regarded in some light as its infantry. No army can consist entirely of infantry, no matter how brave or devoted.

During the World War, many young men of scientific and other abilities, in order to assert their manhood and willingness for sacrifice, joined the infantry at the first opportunity in the capacity of private soldiers. Many of these young men and young officers like them exposed themselves unnecessarily with the intention of getting killed for the glory of their country. As the War progressed, it was recognized what poor soldiers these young heroes were. They deprived their country of talents which would have been worth a thousand times as much had they had proper scope for their activity, and they endangered and destroyed the valuable lives of many beside themselves. Mere martyrdom came cheap in the War.

The young radicals of our universities should read the moral of these incidents. If martyrdom is their ambition, why waste their time with an expensive university

education with which some other young man might make far better use? If they wish to exploit this education in the interests of their political faith, then it is their distinct duty not to be martyrs. They should make the best of the opportunities given them, learn how to work normally with normal people, and risk the obloquy of their more fire-eating comrades in order to fulfill a useful function as organizers of that new state of society for which they are striving. Moreover, by doing this, they will add to the respect which the public has for their views and will be far more effective agents of propaganda in the circles about them than their wild-eyed and loud-mouthed colleagues.

It is only natural and fair that those whose entire lives will be affected by any revolution should ask not merely what are the opinions of the proponents of such revolution, but whether they have the detailed plans and a corps of competent, potential civil servants to carry their schemes through. No man raises his voice in louder protest against the acts of *sabotage* of the present society in plowing under crops and cutting down production than does the Communist. Yet this willful destruction does not begin to compare in intensity with what we may expect if a revolution falls into the hands of a group which is not technically and administratively equipped to run the means of production of the present society. The ensuing chaos would be far worse than that corresponding period in Russia by just the amount by which we are already more industrialized.

If this chaos ensues or if any (Concluded on page 346)



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John R. Fuller	'18	Harold Heins	'27	Gerry Morse	'30	R. M. Zabel	
Robert S. Bolan	'19	Gustav Stackelhaus	'28	Clifton Smith	'31		
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THE STUDENT AGITATOR

(Concluded from page 344)

change of *régime* is followed by an abnormally long period of disorder, no group which causes it can survive. There will be a tremendous swing to the right and even the mildest liberalism will come in for its share of contempt. Fascism of the narrowest sort is likely to reign. None of us wish such a debacle. It can only be avoided by our radicals if they build up a proper technical corps. They must go further, and convince the people at large who fear such a disorder that such a technical corps has been built up. One radical student whose radicalism expresses itself in preparing himself for a constructive career of this kind is worth more than a thousand of the ordinary propagandist sort, especially when their methods of propaganda alienate ten possible friends for every convert they create.

It is a commonplace of history that revolutions consume their protagonists. The Robespierres and the Dantons die early and the Trotskys are exiled. This state of affairs is not an accident. The born agitator remains an agitator, even though the *régime* for which he is agitating has arrived. The gap between revolution and counter-revolution is narrow. We have grave pity for these young zealots who stand to lose whoever wins. A Fascist reactionary *régime* would ostracize them as Communists and a Communist *régime* would dispose of them as possible counter-revolutionists. They will not even have the satisfaction of leaving a glorious memory. A successful radical *régime* would pay lip service to their work as agitators so long as agitations in other countries are part of what it conceives its function to be. A thoroughly successful *régime* would cast off even their memory.

THE INSTITUTE GAZETTE

(Continued from page 324)

It is suggested that further study be given to this problem and that efforts be made by the Administration to develop within the secondary schools a keener appreciation of the importance of technical proficiency in English on the part of men applying for admission to the Institute.

Until improvement in this situation is brought about, it is suggested that the Department of English and

History be consulted by the Faculty Committee on Admissions regarding the qualifications of applicants who enter without examination. It would be better for the Institute to give its own examination to all applicants before entrance and eliminate those who do not meet a required standard. Admission of students deficient in English should no more be countenanced than deficiency in technical knowledge.

The present practice of the Department in testing and segregating the class early in the first term is heartily endorsed. It is felt that different treatment of the several sections is justified and that more intensive drill should be required for the most deficient, or perhaps more time given to the subject. In the event of failure to meet a minimum standard at the end of the year, students should be required to make up the deficiency or be dropped.

Subjects of Instruction

The arrangement of the curricula of the professional engineering departments at present uniformly provides for instruction in written and oral expression and history in the first and second years under the Department of English and History, and instruction in economics in the third year under the Department of Economics and Social Sciences. In the third and fourth years general studies under the supervision of the Committee on General Studies are required in all professional Courses. In addition, the general departments have, in many instances, prescribed special courses of a cultural nature. Thus, there is contact with the Division of Humanities, including the Department of English and History, throughout the student's entire course.

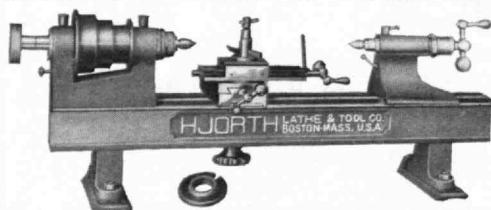
While almost all of the General Study subjects are well organized and in themselves quite valuable, the Committee feels that they lack coordination and fail to unify certain kindred and allied interests which otherwise might look toward a better cultural development of the individual.

Fundamentally, the content of required and optional subjects, in what may be called the cultural band, is believed to be sound. Particularly is this true in the freshman year, where the groundwork is laid for expression and later appreciation of literature. Beyond the first year, it is felt that the subject matter and courses might well be rearranged, and the many subjects now listed as free electives in the Economic and General Study group combined into three or four optional courses extending vertically throughout the remaining three years.

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An arrangement such as this might contemplate a choice at the beginning of the sophomore year of a sequence of correlated subjects in one of the following options — history, economics, sociology, or literature. In each case, however, the historical and economic background of the study should be emphasized, and every opportunity taken for practice in oral and written expression.

In this respect, there would be a degree of uniformity in objective. The subject matter and emphasis in the treatment of it would naturally be quite different. For example, the history option might well embrace the present Randall Option (history of thought), the other options in history now being taught, economic history, and history of religion, literature, and science. The economic option might well emphasize the historical origin of classical economic thought, a literary viewpoint of the writing of noted economists, and include all of the present content of the required work in economics given mainly in the junior year. The literary option could well be enriched by an appreciation of the historical and economic background of the social order from which it originated. In each of these four options would be included at least the elementary fundamentals of the others.

If an arrangement such as this be favorably considered, it should be made to serve the following purposes:

1. Give control and depth to the social or nontechnical thinking of engineering students,
2. Cultivate the desire and habit of critical reading and study, and a love of good literature,
3. Stimulate an awareness of the forces or influence of economic and social development.

These options or courses extending through the last three years should give to the student a preparation for later life and greatly strengthen the present arrangement.

This recommendation should not be construed as a lack of appreciation of the many fine things now being done, nor should it interfere in any way with the special subjects developed by several of the professional departments in coöperation with the English Department, such as the subjects in Biography in Science, Committee Reports and Problem Analysis. It is believed that the time now allotted is quite ample to accomplish all that is recommended. It does mean, however, a degree of supervision which extends beyond the work of the Department of English and History and points to the desirability of a director or coördinating head of the Division of Humanities.

Instruction

It seems important to us that some group should be given the responsibility of revealing to the engineering students that harmony of things which everyday reality conceals. The development of an attitude of mind which accepts social science, letters and art, not as mere embellishments, but as an integral part of life, will help graduates to serve society more intelligently and effectively.

The Institute is fortunate in that it has a staff which not only senses this situation, but is capable of discharging the responsibility, if given it. At (*Continued on page 348*)

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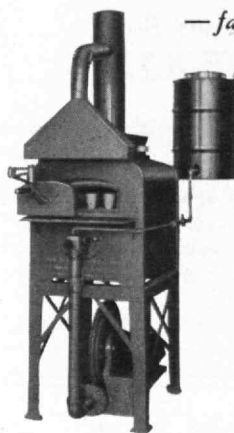
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THE INSTITUTE GAZETTE

(Continued from page 347)

present the cause of the criticism that laxness in expression is prevalent in the work of students in the upper classes may be laid to the fact that no one group assumes the responsibility of supervision over attainment of technical proficiency in expression or the cultivation of social thinking. We believe that it is important to strengthen the influences of the present staff in the Division of Humanities by giving them continuous control over the students through instruction in English, history, and the social sciences extending over the full undergraduate period. Students could then be required to meet some set minimum standard of proficiency and greater emphasis be given to the technique in written reports in each of the professional departments. Thus, emphasis on English could be carried through all four years of undergraduate instruction, both within the Division of Humanities and the several professional departments.

The importance of the qualifications of teachers, and of teaching methods, in carrying out a plan such as this cannot be overemphasized. It is not the subject matter which is taught, so much as the cleverness and finesse with which it is taught, that gives opportunity for exercise in writing, speaking, and social thinking.

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We recommend a continuous and thorough study of the methods by which this might be accomplished.

The present frequent conferences between the Staff and Department Head in the Department of English and History are heartily endorsed, but we feel that they could advantageously be supplemented by frequent visitation of classes. The idea is not of a policing supervision, but that such informal visits would result in the unconscious adoption of the very best methods of instruction from which all would benefit. The present freedom of the instructor has advantages which should be preserved, particularly in the expression of his personality, from which much stimulation is derived.

Aside from class instruction, a concerted effort should be made to develop in the students that integrated culture that has been already mentioned. The extra-curricular activities of the members of the departmental staff has been very helpful to this end. The establishment of such personal relations between student and instructor is one of the best methods of encouraging the habits of self-education that should be carried over into professional life after graduation.

Administration

While the Committee feels the need for, and recommends the appointment of, a director or dean of Humanities at some convenient time in the near future, it is not felt that the adoption of the other recommendations of the report must wait on this appointment.

It is suggested that a committee be appointed consisting of the Head of the Department of English and History, the Head of the Department of Economics, the Dean of Architecture or the Chairman of the Committee on General Studies, the Head of the Department of Modern Languages, and the Dean of Science, and that this committee study the recommendations of this report in so far as it pertains to the objectives emphasized in the integration of the courses now offered, and the adjustment of personnel required, and that it take steps to determine upon the further investigation which it feels is necessary to bring these recommendations to fruition.

In the recommendation of the appointment of a dean of Humanities, we have in mind not only the coordination of instruction in English, history, economics, and general studies, but also supervision over the Departments of Hygiene, Modern Languages, and Military Science. In these activities, unusual opportunities are often presented to control student development in a way not realized without such supervision.

(Concluded on page 350)

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THE INSTITUTE GAZETTE

(Concluded from page 348)

It is also true that student activities in extra-curricular affairs offer many opportunities to supplement the organized efforts of the Division of Humanities. These should not be overlooked in the cultural development with which the Committee has concerned itself in this study and report.

REPORT OF THE VISITING COMMITTEE OF THE SCHOOL OF ARCHITECTURE *

At this joint meeting of the Visiting and Advisory Committees of the School of Architecture, held in the Rogers Building on December 5, 1934, the question of industrial design was submitted with the following brief presentation of present conditions and objectives.

We recognize the present need of additional outlets for students with architectural training, coupled with the necessity for exacting standards in undergraduate work and constant elimination of the unfit. City planning is one such outlet. Industrial design might be another, or architectural administration, or acoustics.

If we approve of these possibilities, the question arises as to when studies, specifically in these fields, may best be undertaken. It should be born in mind that only a limited number of students, at best, are likely to be needed in these activities, so that no elaborate teaching equipment is justified.

There are two obvious main roads of approach: (1) grafting of the necessary requirements upon existing basic architectural courses which may be in the nature of either prescribed courses or electives; (2) postponement of such specialization until after the completion of the requirements for the bachelor's degree in architecture.

The discussion that followed finally led to the conclusion that the School of Architecture should spend its efforts on the development of its present work in abstract design so as to ensure the broadest possible training in this fundamental subject for all of its graduates. This might well be accompanied by a series of lectures in industrial design as a general study open to all M.I.T. students.

It was, furthermore, recommended that definite information concerning industrial design should be placed before the architectural students, even though it was realized that, after all, industrial design as such was just one of many expressions of design in the broadest sense. It was generally believed that the technical and mechanical limitations on such design in any given field were best learned, after graduation, in the shop or office, just as the architect must find the practical details of his profession in the architectural office.

* Members of the Visiting Committee of the Department of Architecture: Harry J. Carlson, * '92, Thomas C. Desmond, '09, A. Lawrence Lowell, * Franklin A. Park, * '95, Edgar I. Williams, * '08, Ralph T. Walker, * '11, Geoffrey Platt, * Sidney Waugh, * '27 (asterisk denotes members present). Advisory members who joined members of the staff in meeting with the committee were: Robert P. Bellows, '04, James F. Clapp, '99, Neils H. Larsen, Walter R. McCornack, '03, and Gilmore Clark.

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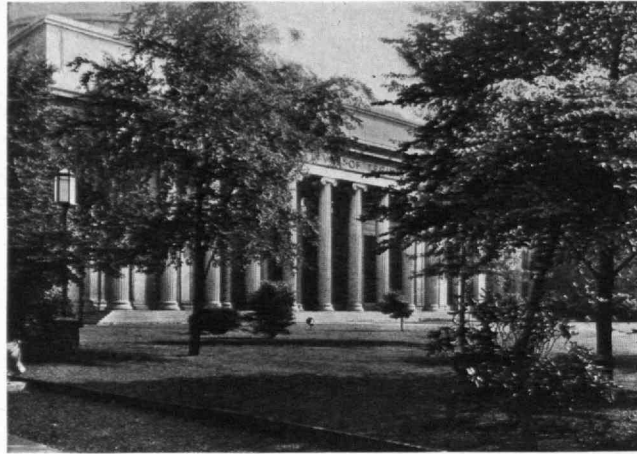
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Prize Winners

□ ELIHU THOMSON, Corporation, Professor Emeritus, M.I.T., the medal of honor of the *Verein Deutscher Ingenieure*, oldest and largest engineering society in the world. Professor Thomson has received nearly every one of the world's great engineering honors for his inventions in the electrical industry. The late CALVIN W. RICE '90 was the only other American to receive this German medal.

□ CHARLES A. KRAUS '08, Professor of Chemistry and Director of Chemical Research at Brown University, the Willard Gibbs Medal of the American Chemical Society for 1935. The award is one of the world's highest scientific honors. Almost since his graduation, Dr. Kraus has been studying the chemistry of liquid ammonia. His own primary interest was that of pure science, a desire to contribute new knowledge of the world. But, as is so often the case, practical data have come out of his researches which have had an important bearing upon the preparation of various materials by electrolysis. He is likewise credited with much of the research which led to the discovery of pyrex glass. He has won a number of other medals, including the Nichols Medal of the New York Section of the A.C.S.

□ ARTHUR L. SHAW '09, the Sanitary Section prize of books for his paper on the "Newton High-Level Sewer," presented before the Sanitary Section of the Boston Society of Civil Engineers and published in their *Journal* for April, 1934.

□ HAROLD L. HAZEN '24, the Levy gold medal of Franklin Institute for outstanding technical papers appearing in the Institute's *Journal*. (See front section for account.)

□ STEPHEN J. ALLING '33, the \$1500 prize in the small-house architectural competition sponsored by the General Electric Company, Schenectady. Mr. Alling is associated with the Formica Insulating Company, Boston.

□ GLENNON GILBOY, Associate Professor of Soil Mechanics at M.I.T., the Desmond Fitzgerald Medal of the Boston Society of Civil Engineers for his paper on "Mechanics of Hydraulic-Fill Dams," presented at a Society meeting and printed in the *Journal* for July, 1934.

Elected

□ HARRY J. CARLSON '92, a member of the Board of Fellows of Bates College.

□ LOUIS S. CATES '02, President of United Verde Copper Company, Ariz. Mr. Cates is also President of Phelps Dodge Corporation.

□ JOHN B. BABCOCK 3d '10, President of Boston Society of Civil Engineers for 1935. Professor Babcock has been Secretary, Director, and Vice-President of the Society.

□ ARMAND H. PEYCKE '11, Vice-President of the American Steel Foundries.

□ CHARLES H. CHATFIELD '14 and DANIEL P. BARNARD '21, Vice-Presidents of the Society of Automotive Engineers for 1935.

□ DUGALD C. JACKSON, JR. '21, President of the Kansas Engineering Society.

In the News

□ MARY LOVERING HOLMAN (Mrs.) '92, because she is an expert in the art of family tracing. Mrs. Holman became interested in genealogy through curiosity about a branch of her own family; next traced lineages for friends; finally reaching her present professional position. She is a member of the Boston Historic and Genealogical Society, of which JOHN C. CHASE '74 is President.

□ FRANK B. JEWETT '03, President of Bell Telephone Laboratories, as national chairman of a campaign to raise a working capital fund of \$161,000 for Engineering Index, Inc., an activity of the American Society of Mechanical Engineers. The Index, discontinued a year ago, is the only agency which makes available to the engineer and research worker an exhaustive and continuing record of findings and developments in the technical field. Other Technology men on the committee include: JOSEPH W. BARKER '14, President KARL T. COMPTON, and A. A. POTTER '03.

□ ELEANOR MANNING O'CONNOR '06, on being appointed to a commission of 17 Boston architects to prepare plans for the \$5,000,000 South Boston federal housing project. Mrs. O'Connor is one of three members of the only firm of women architects in Boston.

□ ROBERT T. HASLAM '11, on becoming general sales manager of the Standard Oil Companies of New Jersey, Louisiana, and Pennsylvania and the Colonial Beacon Oil Company.

□ EDWIN S. BURDELL '20, on being invited to serve on the committee on prison industries, Department of Correction, Massachusetts.

□ JOSEPH L. LEVIS '26, an account of his career as national fencing champion; interview in the *Boston Transcript*. (See class notes for account.)

Written

□ CHARLES A. STONE '88, an editorial entitled "An American Objective," in the *Stone and Webster Bulletin* for February, 1935.

□ By J. ALBERT ROBINSON '02, a paper entitled "An Objective Scrutiny of Insurance" at the April meeting of the American Management Association, Atlantic City, N. J. Mr. Robinson was also in charge of the Insurance Conference.

□ By JAMES A. TOBEY '15, an article in the *American Journal of Public Health*, February, 1935, on "Nutrition and Health and the Price of Milk."

□ By RICHARD H. FRAZIER '23, an article on "Developments in the Honors-Group Plan," in the *Journal of Higher Education* for February, 1935.

□ DENIS M. ROBINSON '31, a paper on "The Breakdown Mechanism of Impregnated Cables," which was read before the Transmission Section of the Institute of Electrical Engineering, London.

Geologists of Note

□ We have been compiling with the help of expert hands a list of prominent geologists who have been trained at Technology. The following list is preliminary and incomplete, but it demonstrates that in geology, no less than in engineering, Tech men in action seem to arrive:

□ HENRY W. NICHOLS '93, Curator, Economic Geology, Field Museum of Natural History; Assistant to Associate Curator, Geology.

□ ELIZABETH F. FISHER '96, Professor Emeritus of Geology, Wellesley Col-

lege, and Chairman of the Department, 1908-1926.

¶ AMADEUS W. GRABAU '96, Professor at National University, Peiping, and Chief Paleontologist, Chinese Geological Survey, 1920 to present; President, Geological Society of China, 1925.

¶ MYRON L. FULLER '96, organizer and chief of Eastern Section of Division of Hydrology, U. S. Geological Survey, 1903-1906; chief geologist, Sun Oil Company, 1917-1920; consulting geologist and hydrologist.

¶ FREDERICK G. CLAPP '01, chief geologist, Association Petroleum Engineers, 1918-1927; consulting petroleum engineer.

¶ WILLIAM C. PHALEN '99, U. S. Geological Survey, 1904-1916; mineral technologist, U. S. Bureau of Mines, 1916-1920; consulting engineering geologist, 1920 to present.

¶ GERALD F. LOUGHLIN '03, U. S. Geological Survey, 1912 to present. Senior geologist in charge of metaliferous deposits, since 1926.

¶ CHARLES H. CLAPP '05, Geological Survey of Canada, 1908-1913; President and Professor of Geology, Montana State University since 1921.

¶ JOHN A. ALLAN '12, Head, Department of Geology, University of Alberta, 1912 to present; Director, Geological Survey of Alberta and on Council of Science and Industry; Resources of Alberta.

¶ NORMAN L. BOWEN '12, assistant petrologist and petrologist, geophysical laboratory, Carnegie Institute since 1912; Bigsby medal, London Geological Society, 1931.

¶ STUART J. SCHOFIELD '12, Canada Geological Survey, 1906-1921; Professor of Structural Geology, University of British Columbia, since 1921.

¶ ALAN H. MEANS '13, manager, Western Mining Department, American Smelting and Refining Company, since 1928.

¶ VICTOR DOLMAGE '17, Canada Geological Survey, 1917-1928, in charge of British Columbia branch, 1923-1928; consulting geologist since 1928.

¶ GEORGE HANSON '20, Canada Geological Survey, since 1920.

¶ JAMES R. CUDWORTH '21, Professor of Mining, Alabama University; and director, State Mine Experiment Station, since 1931.

¶ RICHARD W. SMITH '21, Assistant State Geologist, Georgia Geological Survey, 1926-1934; director, 1934 to present.

¶ FRANCIS G. WELLS '22, U. S. Geological Survey, 1928 to present.

¶ WILLIAM A. WALDSCHMIDT '22,

now associate professor of Geology, Colorado School of Mines.

¶ MACLEOD E. HURST '22, geologist, Ontario Department of Mines.

¶ JOSEPH L. GILLSON '21, instructor to associate professor Geology, M.I.T., 1922-1929; now geologist, E. I. duPont de Nemours; Vice-President, American Mining Society, 1931.

¶ THOMAS L. GLEDHILL '26, geologist, Ontario Department of Mines, 1923-1928; consulting economic geologist, since 1928.

Aviation News

¶ DR. KARL T. COMPTON, chairman of the Navy's Science Advisory Board, selected eight scientists and engineering experts to analyze and make reservations to the Secretary of the Navy for the future design and construction of airships. The following are of especial interest here: WILLIAM HOVGAAARD, professor of naval design, M.I.T., ALFRED V. DE FOREST '11, associate professor of mechanical engineering, M.I.T., FRANK B. JEWETT '03, President of Bell Telephone Laboratories.

¶ At a recent address before the Eastern Association of Physics Teachers, Professor JEROME C. HUNSAKER '12, Head of M.I.T.'s Department of Mechanical Engineering, predicted that long-distance commercial flights of the future will be made through the stratosphere. Professor Hunsaker spoke on the general subject of air transport at a dinner meeting of the Aeronautical Engineering Society on March 21 in Walker Memorial, and at the Alumni Council on March 25.

Engineering Societies Meet

¶ At the April meetings of the New-England Engineering Societies, the following took part:

¶ ARTHUR C. RUGE '33, an address on "The Effects of Earthquakes on Elevated Water Tanks as Determined by Model Studies," before the Designers' Section of the B.S.C.E.

¶ JOHN H. ZIMMERMAN '23, a paper on "A Comparative Study of Cutting Procedures as Applied to Structural Steel," before the Boston Section, American Welding Society; also R. F. GOODMAN and H. R. BULLOCK, staff, on "The Problem of Spot Welding High Strength Aluminum Alloy Sheet" and "Welding Instruction for Engineering Students at M.I.T.," respectively. Professor Zimmerman gave another talk on "Analysis and Classification of Welders."

¶ JAMES HOLT '19, staff, a paper on

"Air Conditioning," before the Building Officials Conference.

DEATHS

¶ JOHN L. DU FAIS '78, March 14.

¶ JAMES RITCHIE '78, November 15, 1934.

¶ ERNEST F. KELLEY '81, January 14.

¶ WINSLOW B. AYER '82, March 3.

¶ C. BELLE KENNEY '86, March 4.

¶ FRANK R. FIELD '89, January 25.

On leaving M.I.T., Mr. Field went to work with the National Tube Works at McKeesport, Pa., as a draftsman. Later at Chicago he was employed as sales engineer by the Link Belt Machinery Company. For the last 35 years he represented the Jeffrey Manufacturing Company, of Columbus, Ohio, manufacturers of mining and other large machinery; 20 years at their Denver office and 15 years as their Pacific Coast representative at Los Angeles. During the last part of his life Mr. Field was more or less an invalid, but found great pleasure in his home; music, library, and the cultivation of an apiary.

¶ EUGENE E. PETTEE '92, March 17. (Brief account in class notes.)

¶ JOHN C. SCOVEL, JR. '96, December 20, 1934.

¶ ROSCOE B. WHITTEN '98, February 16.

¶ HORACE W. SOULE '99, March 24.

¶ W. RAWSON COLLIER '00, January 29.

¶ LEONARD M. FOWLE '01, March 16. Mr. Fowle was yachting editor of the Boston *Globe* and one of the outstanding yachting technicians of the country. Although he had received a technical education, he joined the staff of the *Globe* soon after graduation and went to work in the office of the managing editor, his father. It was yachting, however, which became Mr. Fowle's most distinguished field of activity, and which made him an authority on the technical features of pleasure sailing.

¶ W. DEWITT VOSBURY '04, February 3.

¶ THOMAS C. PINKERTON '05, February 16.

¶ FREDERICK W. MCKOWN '16, February 27.

¶ TOWNSEND H. HINGSTON '20, February 23.

¶ M. GORDON SMITH '23, December 7, 1934.

¶ TANCRED S. GREENWOOD '24, March 16.

¶ OLIVER W. GAINES, JR. '27, October, 1934.

¶ BENJAMIN PROCTOR 3d '29, March 24.

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Technology Club of Panama

Austin W. Brooks '11 has been transferred from the Madden Dam to Cristobal, and has been appointed superintendent of the Northern District of the municipal engineering division of the Panama Canal. — John E. Deignan '26, also from the Madden Dam, sailed Sunday, March 24, for New York to spend a vacation of several months with relatives in New Jersey. — Lieutenant Clarence J. Renshaw '32, who has been stationed for the last year at Corozal, was transferred the latter part of February to France Field, where he will be attached to the Quartermaster Corps, with quarters at Fort Randolph.

Prince Henry, the Duke of Gloucester, sailed from Cristobal on the H.M.A.S. *Australia* on March 4 for Kingston, Jamaica, "bringing to a close the brief but crowded visit of one of Britain's royal sons." Because of having answered an SOS call sent out by radio man, Phillip Lord, from his unseaworthy schooner, *Seth Parker*, off Suvarrow Island in the South Sea, the *Australia* arrived a week behind schedule, and the tall, slim, debonair prince had to crowd a two-day program into six short hours. The Prince was met by the British minister to Panama, F. E. F. Adam (who, by the way, told me he was a descendant of one of the famous Adam brothers) and called on the President of Panama and the Governor of the Canal Zone, and inspected the Guard of Honor provided by the Army Air Corps of Albrook Field, after a sight-seeing flight over the Canal. After the luncheon at the British Legation, the Duke and his party were driven to Pedro Miguel locks, where they boarded the Canal tug *Favorite*, for a trip through Gaillard Cut and the Gatun Lake to join the *Australia* at Gatun Locks. Thus the Duke had an opportunity to see the Canal at work that is afforded few visitors. Major W. E. R. Covell, assistant engineer of maintenance of the Canal, acted as official guide for Prince Henry on the *Favorite*. Major Covell appeared in the news on three other occasions: On issuing the statement that the level of Madden Lake would be dropped from 233 feet to 215 feet, warning the natives along the banks of the Chagres River to be prepared for the sudden rise in the river between Madden Dam and Gatun Lake; on announcing that final payment for the Madden Dam project was made March 16 to the contracting companies, although considerable work remains to be done by government forces; and on announcing that Madden Lake would be completely emptied before the end of the dry season.

The Secretary thought that William H. Beers '05 and George Cyrus Bunker '05 were the oldest Tech men on the Isthmus, but a notice has been received that Charles M. Butters of Pedro Miguel, is listed with the Class of '01. Other names added to the list of Tech men on the Isthmus are: Herbert R. Pierce '25, Engineering Department, Cia Bananera, Halphen Fitchett Ltda., David; and Antonio J. Sucre '31, Aguadulce. This makes 44 Tech men recorded as being on the Isthmus.

In the pictorial section of the New York Times for March 3, there are reproduced two mural paintings for the New York State Roosevelt Memorial Hall, representing the early history of Panama and the allegorical building of the Panama Canal. Perhaps the reproductions fail to do the paintings justice, certainly they both failed to impress me. Aside from the facts that the Indians of Panama are not considered either Mayan or Aztec and that bloody old Morgan is more important in the history of Panama than the little-known pirate, Captain Hook, the figures seem so remarkably lifeless and stilted that they reminded me of a crude cast-iron figure which used to stand in front of the Court House in Charlottesville, Va., to which I used to hitch my horse a long time ago. They also reminded me of those curious wooden Indians that used to stand in front of cigar stores in the Gay 'Nineties. E. H. Blashfield '69 could have done a better job. — MEADE BOLTON '16, Secretary, Box 23, Balboa Heights, Canal Zone.

Worcester County Alumni Association of M.I.T.

The first winter meeting held by the Worcester Alumni was the best attended dinner ever held by that group, 65 members being present, on March 11, at the Hotel Bancroft. Guests for the evening were Professor Frederick K. Morris of the Geology Department and President of the Faculty Club, Professor Charles E. Locke '96, Alumni Secretary, and O. B. Denison '11, former Alumni Secretary.

President Russell B. Lowe '02, Fitchburg, presided and introduced the speakers. In a short business session it was voted to hold an outing in place of the regular dinner this spring. The program, time, and place will be decided later. President Compton will be the guest of honor. O. B. Denison was appointed chairman of the outing committee, with authority to select his own committee. Frederick N. Dillon '93 of Fitchburg, Albert S. Heywood '92, H. M. Latham '93, and Herbert W. Estabrook '97 of Worcester were named as a committee to nominate officers to be elected at the spring meeting.

Professor Locke gave a short and interesting talk on alumni affairs and told of the alumni home-coming day to be held on Monday, June 3. Professor Morris' subject, "Thinking of Thinking," was exceptionally well received, holding interest from start to finish. In developing his talk, he classified thought into four types: artistic, grossly independent of fact; emotional, in which reason is forgotten; speculation, most dangerous because it leaves science completely behind; and productive, founded entirely on fact and sound reasoning. Never does a good engineer or scientist let lesser types of thought interfere with genuine productive thinking, he said. Professor Morris is to be congratulated on making a particularly interesting talk with plenty of humor.

O. B. Denison was given a rousing welcome to Worcester. After a short speech he gave one of his pianologues so well known to all Tech men and which was received with the usual enthusiastic calls for encores. Obie is now located permanently in Worcester, being associated with the Hotel Bancroft.

The committee in charge consisted of: John A. Swift '27, chairman, H. M. Latham '93, and Howard R. Stewart '17, Worcester; A. B. Sherman '06, Fitchburg; and Robert H. Brown '22, Leominster. — JOHN A. SWIFT '27, Secretary, 55 Fales Street, Worcester, Mass.

Southeastern M.I.T. Association

On February 25, the Association held a luncheon to hear Dean H. E. Lobdell '17 and to see some of the Edgerton high-speed moving pictures. Mr. Young, principal of the Ramsay Technical High School of Birmingham and 19 Alumni from Birmingham and Anniston attended. All were interested in the pictures and especially in Dean Lobdell's exposition of the workings of the undergraduate loan and the freshman scholarship funds. Visits from representatives of M.I.T. have been of rather rare occurrence during recent years, and it is the earnest hope of the Association that other representatives will find opportunity to visit us in the near future and that Dean Lobdell, having found the way, will return again.

Those in attendance at the meeting were: A. W. Allen '85, O. E. Charlton '24, Dr. B. F. Clark, Jr., '31, D. F. Elliott '24, G. J. Fertig '24, C. B. Gamble, Jr., '34, K. W. Grimley '29, F. G. Hamner '24, P. V. Kelly '13, K. S. Lord '26, K. M. McDonald '24, Captain J. D. McIntyre '15, T. H. Mawson '27, W. M. Mobley '21, A. G. Smith '29, O. G. Thurlow '04, F. C. Weiss '13, Lieutenant Colonel Richard Donovan '21, Dr. Rogers McCullough '22, and Captain L. E. Schoonmaker '17. — DOUGLAS F. ELLIOTT '24, Secretary, Alabama Power Company, Birmingham, Ala.

M.I.T. Club of Western Pennsylvania

The February meeting of the Club was a buffet supper at the University Club. The usual good food and beer were on hand for all participants, about 30 in number. After supper we listened to a talk by Mr. B. Robinoff, who told of his experiences in Soviet Russia last summer while on a vacation. Mr. Robinoff is Superintendent of the Christy Park Works of the National Tube Company, and has been in this country many years. Being a native Russian, he had the advantage over many of our current public lecturers of being an "insider." His views on the present situation in Russia and the plans of the rulers of the U.S.S.R. were certainly the most enlightening that this writer has heard.

The March meeting is being reported by hearsay, as the writer was out of town. The occasion was a dinner at the University Club, and the guest of honor was the Mayor of Pittsburgh, William McNair. For the first time in the Club's history, newspaper reporters were present at a regular meeting. Much to the surprise of all present, the Mayor got along much better with his traditional antagonists, the newspaper men, than he did with the M.I.T. men. The meeting was conducted by His Honor as a question and answer discussion group. Speakers on economic subjects always take a chance when they tangle with men who have finished the famous courses in "pol.econ." at M.I.T., and the Mayor did not have things all his own way.

The usual weekly luncheons continue to be held Fridays at the Union Grill, 440 Diamond Street, Pittsburgh. Here current topics of all kinds are debated, and it is too bad for the waitress if the service is not 100%, or even if it is 100%. — E. J. CASSELMAN '15, *Review Secretary*, Mellon Institute, Pittsburgh, Pa.

M.I.T. Club of Central New York

The last meeting of the Club was held at Tubbert's Restaurant, March 18, with 24 members and four guests, three of whom were prospective students. Our guest of honor and speaker of the evening was Professor W. K. Lewis, who gave us a very enlightening talk on the present activities and plans for the future of the Institute.

The value of coöperative effort as applied to interlocking work of different departments at the Institute was cleverly demonstrated as the prime necessity for progress on all human problems, from which point Dr. Lewis drifted to the subject of chemical engineering. He gave us many startling statistics on oils and synthetic materials which in some cases relieved our minds and in others gave cause for apprehension. Dr. Lewis left a lasting impression with the members of the Club, and the Institute is indeed fortunate in having a truly master mind in such a position as Dr. Lewis holds.

At the conclusion of this talk, the Edgerton movie was shown which created much interest, both from the scientific viewpoint and the interesting bag of tricks that it contains.

The following officers were elected for the coming year: President, Fred S. Hungerford '24, succeeding Edward C. Booth '25; Secretary and Treasurer, Donald W. Diefendorf '30, succeeding Fred S. Hungerford '24, and Frederick W. Barker, Jr., '12 continues as Honorary Secretary.

At the end of another year we find our club solvent, not very large, but, judging from the interest shown at the last meeting, exceedingly healthy. Henceforth, Donald W. Diefendorf '30, 203 Summit Avenue, Syracuse, N. Y., will write these notes and it is suggested that all watch for the increased activity under the new Secretary. — FRED S. HUNGERFORD '24, *Secretary*, 208 Draper Avenue, Solvay, N. Y.

Technology Club of the Philippines

For some years the M.I.T. Association of the Philippines has been rather inactive. Recently, however, we have re-organized and now call it the Technology Club of the Philippines.

A board of trustees has been elected as follows: President, Aubrey P. Ames '19; Vice-President, Manuel Manosa '21; Secretary, B. P. Abrera '32, and members Andres Borromeo '27, E. R. Hyde '06, and H. R. Wells '26.

The first meeting of the new organization was held at the Manila Hotel on December 1, 1934, and the second was held at the same place on February 23, 1935. At present the Club has no headquarters, but steps in this direction are being taken. Please direct all correspondence to the Secretary. — BERNARDO P. ABRERA '32, *Secretary*, P. O. Box 2559, Manila, P. I.

M.I.T. Club of Northern California

The annual meeting of the Club was held at the Engineers' Club, San Francisco, on Wednesday evening, March 27. Following a dinner, the business meeting was held. The major item of business coming before the meeting was the election of officers for the coming year, as follows: President, G. D. Whittle '08; Vice-President, Richard Piez '29; Secretary, D. D. Donald '25; Treasurer, Blake Darling '19; Executive Committee, R. A. Folsom '18 and G. R. Norton '07.

We were particularly fortunate in securing Bailey Willis, Professor Emeritus of Stanford University, an internationally known expert on geology and earthquakes, to address the Club at this meeting. Professor Willis gave a very fine talk on the subject of earthquakes, with particular reference to earthquake machines and faults in California. This talk proved very interesting to the 40 alumni and their guests who attended the meeting.

The regular luncheons are held each Tuesday at the Engineers' Club, 206 Sansome Street. These luncheons are very

informal and all alumni are cordially invited. — D. D. DONALD '25, *Secretary*, 140 New Montgomery Street, San Francisco, Calif.

CLASS NOTES

1874

The writer's six associate survivors of the Class were asked to furnish a few lines about themselves for The Review, and prompt responses came from three.

Doane writes from Middleboro that he is in doubt how to construe a "few lines about yourself, whether past, present, or future; if the past, the less said the better; if the future, the results are problematical. At present I am boss of a country hardware store and doing my darnedest to corral enough coin to pay for eats and taxes. On the side, I function as President of a savings bank and as director of a trust company. Religiously and socially, my efforts are through the Congregational Church and a Lodge and Chapter of the Masonic fraternity. I am immune from dues in the last named on account of a 50-year badge conferred two years ago. Of progeny, I have none; of friends — if attentions, sympathy, and the like shown me in my recent illness are any measure — I have a host, and am pleased to count yourself as one of them." No mention of a wife being made, it may be assumed that he has thus far escaped any matrimonial entanglement.

Holbrook is still in Kansas City, Mo. "I expect to go to the Pacific coast early in May to be gone six months, having things to study that I think important but not likely to see daylight in this life." We hope he may see Boston again and in more salubrious weather than when he was here last year.

Stevens writes from Ventnor, N. J.: "You ask me to send you a few lines. Well, what use is writing or talking? Do we ever understand each the other by either of these means? Are they not rather the means of an entertainment which lead to discussion and generally misunderstanding unless we strike a vein of sense that is common to us all? Common sense! What is a 'common' sense? For more than 80 years I have sought the answer. I get plenty of answers but they only the more obscure what is *the* answer. That seems to be hidden in a maze of generalities, although now and then it flashes us a signal light!" Regret to note his pessimistic outlook.

No reply came from Bouvé, Read, or Wilder. Of myself, much might be said but perhaps the less the better; never busier in my life with 90% of my time devoted to non-remunerative work, some requiring pay for the privilege of doing. Have just ended my 13th year as the 13th President of the New England Historic Genealogical Society and the 13 superstition seems to have missed me. I can be found at the Society house when not attending some professional, patriotic, historical, fraternal, or family society meeting, of which a card index is necessary to see that all get attention, and I am help-

1874 Continued

ing maintain transportation lines by getting in several thousand miles each year of paid-for railroad travel.

The recent death of Sam Colt's widow brings to mind the vivid personality he possessed. Colt, who left the Class of '73, became a lawyer and achieved distinction in political life and as the head of large banking and industrial organizations. — JOHN C. CHASE, *Secretary*, 9 Ashburton Place, Boston, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1884

Alumni will be interested in the article in "Technology Men in Action" entitled "Fifty Years Ago" in the last number of The Review which described the Observatory on Blue Hill, founded by our classmate the late Abbott L. Rotch. This was not just another weather station, but was founded for the purpose of research in meteorology, thus improving the accuracy of weather forecasting. Incidentally, it is interesting to note that for four years the accuracy of its local forecasts was nearly 94% correct.

To this end the upper atmosphere was sounded first by huge kites carrying the necessary instruments, and later balloons replaced kites. An early sounding made a record of five miles; on attempting to reel in the apparatus, the wire broke and the wind carried it across various trolley and power circuits. It came to rest on the Old Colony railroad tracks at East Braintree, where the first train wound it around its wheels so thoroughly that it took three-quarters of an hour to unreel it.

The sounding balloons and apparatus were shown by the Observatory in 1904 at the St. Louis World's Fair with records of more than nine-and-one-half miles in height. Much research has been done on fog dissipation. At present a study is being made of the relation between surface temperatures of the Western Atlantic Ocean and the seasonal weather normalities of New England.

Besides all kinds of meteorological instruments, there is also a library which is probably the largest in the world, with the exception of that in the central office of the Weather Bureau, Washington, D. C. Though the days of spectacular kite-flying are over, and weather research has newer and wider horizons, no weather passes over Blue Hill without leaving its trace on a dozen continuously recording instruments. This first station has fathered similar stations; notably that on Mt. Washington, established in 1932 and operated under the supervision of the Blue Hill Observatory.

The semicentenary was celebrated by a luncheon at the observatory and a description of the founding, the early experiments, and important investigations broadcast over the observatory's radio station.

The note relative to Morse's 50-year membership in the American Society of Mining Engineers reminds the writer to say that he has been a member of the

Deutsche Chemische Gesellschaft for 50 years, and of the American Chemical Society for more than 40.

Tyler's address was inadvertently omitted from the 50th Directory; it is 744 Jackson Place, or Library of Congress, Washington, D. C. — A. H. GILL, *Secretary*, Room 4-053, M.I.T., Cambridge, Mass. S. S. DEARBORN, *Assistant Secretary*, 4 Newport Road, Cambridge, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1888

Greetings to all '88 men who have not read these class notes for a year or two. If at all possible we know that you will make plans to be on hand at the new Technology in Cambridge on Alumni Day, June 3, to take part in all the festivities being planned for that occasion. We expect to have our class dinner about that date and you will be notified in ample time regarding all details.

Not long ago we happened to be in the Old State House, Boston, now occupied by the Bostonian Society, and saw a recently discovered photograph of Fort Warren, Boston Harbor, taken in 1865, showing a regiment of Civil War troops just home from the South. This reminded us of our '88 Class Field Day in the same old fortress only 20 years later in the spring of 1885 but now nearly 50 years ago. You all remember the photographs we had taken that day which were reproduced in our Class History of 1932. One showed our officers Major Shepard, Adjutant Spaulding, Quartermaster Devens, Major Beaman, Captains Dempsey, Blair, Poor, and Ferguson, 1st Lieutenants, Claflin, Chester, Bradlee, and Holman, 2nd Lieutenants, Faunce, J. C. T. Baldwin, Conner, and Wheeler, Sergeants Sabine, Wood, Cheney, Nichols, Mead, Keough, Blanchard, and Blood; also Corporals Stone and Webster, Robb, Dearborn, Child, Foque, and, last but not least, John C. Runkle. We will never forget that happy day spent at old Fort Warren.

As we type these lines, we are listening to a radio announcement of the great spring flower show of the Massachusetts Horticultural Society which will occupy Mechanics Building for a full week and which, it is stated, will surpass by far the New York flower show just closed. This is not to be wondered at because our classmate Edwin S. Webster has been President and directing genius of the Massachusetts Horticultural Society for, lo, these many years.

J. Edward Fuller, Vice-President of the George A. Fuller Construction Company spent the month of April in the South, golfing and absorbing ultraviolet rays in the land of tropical fruits and flowers.

The Masquer's Guild recently produced three one-act plays at the Peabody Playhouse under the management of Miss Lavinia L. Sabine, daughter of Mr. and Mrs. Charles W. Sabine of Chestnut Hill and Duxbury. Among others Miss Sabine was assisted by Miss Elizabeth Runkle,

daughter of Mr. and Mrs. John C. Runkle of Cambridge and Duxbury. Thus the daughters of '88 are helping to maintain the reputation of our Class for managerial and histrionic ability.

For the next six months please direct all communications to the Secretary as follows. — BERTRAND R. T. COLLINS, *Secretary*, Chebeague Island, Maine.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1890

The following changes of address have been received from our classmates: Charles H. Alden, 1004 Boren Avenue, Seattle, Wash.; Charles O. Churchill, Round Hill, Springfield, Mass.; Francis W. Crosby, 1720 Euclid Avenue, Cleveland, Ohio; John C. E. deBuller, St. Paul Apartments, Baltimore, Md.; Dr. Marie A. Molineux, 2605 Prytania Street, New Orleans, La. — GEORGE L. GILMORE, *Secretary*, 57 Hancock Street, Lexington, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1892

We announce with regret the death of Eugene Everett Pettee which occurred on March 17 at his home in Wellesley Hills. He was born in Texas. For many years associated with the firm of J. R. Worcester and Company, consulting engineers of Boston, he specialized in bridge construction, one of his last pieces of work being the design for the Saugus River bridge now under construction near Lynn. Memberships in professional societies included the Boston Society of Civil Engineers, the American Society of Civil Engineers, and the Boston City Club. He is survived by his wife, Mrs. Margaret Babcock Pettee.

Billy Kales just returned from a trip to Panama and, wearing a coat of tan and an atmosphere of well-being, was in my office March 11, having come to Cambridge to attend a meeting of the Corporation on March 13. Billy is also Chairman of the Visiting Committee of the Department of Civil Engineering. He tells me that he is leaving shortly on a motor trip to the Pacific Coast, visiting Boulder Dam on the way. — Arthur W. Dean, chief engineer of the Massachusetts Department of Public Works, likewise a member of the aforementioned Visiting Committee, was seen momentarily in the corridor on March 12. You may expect an interesting report of the findings of the Committee in a future issue of The Review. — Professor C. E. Fuller is manager of the water and light department of the Town of Wellesley; also manager of the sewer department of the town, as is disclosed by the 54th Annual Report.

The Class was represented at the Annual Alumni Dinner, February 9, at Walker Memorial, by seven of us, as follows: Carlson, Falvey, H. L. Johnson, W. W. Locke, Park, Sargent, and Hutch-

1892 Continued

inson. Allen French sent regrets by picture post card from San Diego, Calif. Ross Tucker was absent, being out of town, and Heywood acknowledged but had another engagement.

George H. Ingraham writes from his home at Chagrin Falls, Ohio: "It seems a long time since our graduation, and many things have happened to us all since we received those sheepskins and went out with a feeling that whatever we knew nobody else had ever been taught, and that, therefore, we had something to contribute to the world. What a disappointment when during my first job at an architect's office I found that the office boy knew more about turning out plans and details of buildings; but let that be as it may, I have managed to turn out some things to my credit. In 1930, after the 1929 stock slumps, I gave up my office in the Keith Building in Cleveland, but continue to do some work from my present address. Last year Mrs. Ingraham and I spent a year traveling in Europe; we saw many places in England, Scotland, and Wales. Spent some time in London and Paris and the country towns of France. We traveled through Switzerland into Germany and were almost arrested in Freiburg by the Nazis of Hitler. After Germany we went into Austria and spent some time in Vienna, and were there when the first attempt to kill Dollfuss was pulled off. Leaving Austria, we traveled through Italy and back to Nice and Monte Carlo, but lost no money at the latter place. From Nice we went to Marseilles and embarked on an American Export Boat for Egypt and Palestine. On this trip we met the wife of Albert L. Hart, a classmate whose address is care of Silver Burdett, 41 Union Square, New York City. We traveled with her for some time and on our return trip got off at Málaga, and spent some time in southern Spain, doing the cities of Ronda, Córdoba, Seville, and Granada. From there a trip to northern Africa, visiting Tangier, the international town, Tetuán and Xauen in Spanish Morocco, then back to Málaga, Spain, where we joined again the American Export Line for home. In New York I was glad to meet Hart whom I had not seen since graduation. It is more than 40 years since we slaved so hard at the old M.I.T. on Boylston Street, with our Professors Runkle, Van Daell, Lanza, Cross, and others. One wonders sometimes if the 43 years have been spent with profit. In my case I count a few buildings around Boston, Detroit, and Cleveland to my credit or discredit, many water colors and sketches of my travels, a son, three daughters, and five grandchildren. Tech, rah, rah; Tech, boom, bah; M.I.T. '92, ha, ha!!"

Francis Walker, 2351 Ashmead Place, Washington, D. C., writes on the letterhead of the Federal Trade Commission, of which he is chief economist. His letter of January 24 tells his story, as follows: "In fulfillment of my promise to help you out in your emergency rôle as acting Secretary, I am going to jot down a few more or less personal items (my first offense, I

think) that may be of interest to some fellow members of the Class, particularly items connected with the investigation of trade and industry by the Bureau of Corporations and by the Federal Trade Commission (1904-1935). In association largely with Luther Conant '95, I participated in all the important investigations of the Bureau of Corporations (and directed some of them), including the meat packers, Standard Oil, tobacco, farm machinery, lumber, and steel 'trusts.' This work included for me two very interesting investigations in Europe concerning the oil trade and the steel industry. At this time I visited most of the chief countries and met a great variety of interesting people in business, government, and academic life. I remember with especial pleasure a week's visit in Rome at Christmas time in 1908 (on vacation), where I fortunately ran across Leonard Metcalf at the Vatican, and spent the rest of the time going around with him and some of his friends.

"When Luther Conant was appointed commissioner of corporations in 1912, I was made deputy commissioner and continued in that office until it was merged in the Federal Trade Commission in 1915. The Washington Society of the M.I.T. was a comparatively small group at that time, but I saw more of its members then than in more recent years. I was even elected President for one year, 1907, but my responsibilities were not heavy. Now we have an ideal president in Professor Harry W. Tyler '84, who, we all hope, will long continue in that office.

"Shortly after the Federal Trade Commission was organized (of which I became the chief economist), this country entered the War, and I had the general direction of the war work which had as its principal object the collection and preparation of data on costs of production, which were used by the War Industries Board, the Fuel Administration, and the various purchasing departments of the Government to fix prices or to enable them to exercise an effective control with regard to purchase contracts. In this work a method of analysis was employed for the costs of companies in an industry as a whole which, so far as I know, was first used by me in my book, 'Monopolistic Combination in the German Coal Industry,' 1904. It has been sometimes described as the 'bulkline' method. As a result of war-time price control of manufactured articles, prices were greatly reduced and kept down, shortly after the War was started, which helped to keep down the enormous debt burdens of war and to prevent economic chaos. Since the War a great variety of inquiries have been made, including two of particular interest, into the commodity exchanges. The first, which was on the grain exchanges, developed, on the basis of an enormous amount of statistical detail, the facts regarding 'future trading' and its relation to cash prices and futures. For the first time, facts drawn, in large part, from the records of brokers and traders were the basis of the conclusions, instead of opinion more or less expert or biased.

"The inquiry which would be of most interest to the majority of Tech men, however, is that into the electric and gas industries. This inquiry was divided into two parts, one regarding the so-called propaganda activities of the utilities and the other regarding the corporate structures, intercorporate relations, capital assets, liabilities, expenses, earnings, service organizations, and so on, of the holding companies, subholding companies and their operating subsidiaries, and other associated companies. This second part of the investigation has been under my direction, including the examination of the companies' books of account and other corporate records, often over a period of many years, and the preparation of the reports by the numerous examiners, accountants, economists, and so on, with Judson C. Dickerman '95 as the engineering expert. This inquiry probably has involved the most exhaustive examination of such a character ever made. The valuation work of the Interstate Commerce Commission was probably greater in volume, but it was narrower in scope, and was made at a period long after the railroads had been brought under federal supervision. The published record for this branch of the inquiry is very large, including parts 21 to 65 in finished form, with probably more than a score of volumes to follow. Each of the larger holding-company groups in the electrical field has been covered to a large extent already, but some important companies have not yet been examined. The real significance of this investigation, however, goes far beyond the utility field, because it has important bearing on corporate organization, finance, accounting, and management generally. One of the most striking features is the detailed statistical development of the connection between the sale of securities and the rigging of their prices on the stock exchanges by certain issuing companies. The general report of the commission on the completed portion of the investigation is expected to be in print before this letter. The inquiry is to continue until the end of the current year, with particular reference to natural-gas production and gas pipe lines, on which a supplementary report is contemplated. Particularly during the inquiry into the electric-power industry, I have run across a number of M.I.T. men, notably the late Frank L. Dame '89, former President of the North American Company, and Charles A. Stone '88 of Stone and Webster, who gave complete cooperation.

"My son, Francis Stoughton Walker '30 (Yale Law School, '33) now attorney for the new securities and exchange commission, has kept up the family connection with the Institute. If, 43 years from now, you need a few more personal items, and I should still be around, don't hesitate to ask for a second installment of the story." John Hall suggests that we get together at the time of the Grand Reunion, June 3. — JOHN W. HALL, *Secretary*, 8 Hillside Street, Roxbury, Mass. W. SPENCER HUTCHINSON, *Acting Secretary*, Room 8-219, M.I.T., Cambridge, Mass.

*Plan to Attend
Technology's Homecoming Alumni Festival
On June 3*

1894

A few of the faithful were at the Alumni Dinner in February but many of the old stand-bys sent excuses that remind one of a certain Biblical event, although the Secretary does not recall that any reported that he had married a wife and so could not come. — George Owen, John Ferguson, Warren Jenney, and the Secretary were there. Bob Weston was away on business. Al Tenney has been spending the winter in California so could not attend; Harry Gardner has been having another long session with the surgeons and could not come. Clif Howes was unable to be present as the result of being hit by an automobile on Christmas eve. Not a nice present! Howes says: "I got a broken rib in my back left side, a sprained ankle, besides contusions and abrasions." He was just beginning to get back to work, and kept to the house at night. Howes seems to be a regular target for autos, as seven years ago he was pretty badly cracked up by one, but they haven't finished him yet.

Quite a grist of changes of address have come to hand. Sterling Cousins has left Los Angeles (probably too crowded and noisy, or too many movie stars) and is now living at 2599 East Nob Hill Street, Salem, Ore. J. H. Gardner sends 10 Clinton Place, Mount Vernon, N. Y., as his latest abode; Earl Jenckes, 403 Wyomissing Boulevard, Wyomissing, Pa.; Warren Jenney, 78 Summer Street, Weston, Mass.; Alan Claflin, 24 Lawson Road, Winchester, Mass. W. C. Peet has moved from New York City to Grace Church Street, Rye, N. Y. It is a long time since John P. Story has been heard from, but he is now head of Story and Company, 804-17th Street, Washington, D. C. — Henry Swanton's address is now Route 4, Wiscasset, Maine.

We have learned with great regret of the death of C. R. Knapp of the engineering firm of Heyl and Patterson, Inc., of Pittsburgh. Knapp died on December 18, 1934. He had not kept very close contact with the Class, so no details are known.

While in Washington in attendance at hearings on the Pure Food and Drug bill (the Copeland bill) the Secretary chanced to meet Joe Thropp and had a few minutes of conversation with him. Joe is now located at 400 Elm Street, Chevy Chase, Md., just outside the District borders. He is carrying out some investigations for one of the commissions of the alphabetical groups in connection with the government's efforts to keep everybody busy. — SAMUEL C. PRESCOTT, *Secretary*, Room 10-405 M.I.T., Cambridge, Mass.

*Plan to Attend
Technology's Homecoming Alumni Festival
On June 3*

1895

The 40th reunion of our Class will be held at Oyster Harbors on the Cape, Osterville, Mass., on June 1 and 2, 1935.

This location has been selected in order to comply with the request of our Alumni Association which is planning the All Alumni Day on June 3, and to be close at hand where we can conveniently close our festivities and participate in our Class Dinner and in the great event at Symphony Hall on Monday, June 3.

Your committee has selected this site also for the reason that it offers every opportunity for relaxation in a secluded and beautiful location. It is realized that a number of our classmates may not be able to decide definitely until the last moment as to their attendance, and it is, therefore, requested that everyone should reply promptly to the questionnaire, stating any proviso which may cover his individual condition.

While some answers may be indefinite, they will, nevertheless, aid the reunion committee in planning a complete and most enjoyable outing. It is also appreciated that the expense entailed may appear prohibitive to some, but we want everyone to feel that since it is the plan to underwrite a part of the expenses of this reunion, an effort should be made, if at all possible, to attend this 40th reunion.

— LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass. JOHN H. GARDINER, *Assistant Secretary*, Graybar Electric Company, 420 Lexington Avenue, New York, N. Y.

*Plan to Attend
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On June 3*

1896

Rockwell saw Billy McAlpine in Boston one Sunday early in March. Billy now has his headquarters in Washington and is apparently the Government specialist on river and harbor developments. At the time Rockwell saw him he was on his way to inspect the proposed power development of Passamaquoddy Bay. — Will Coolidge was in Boston on March 13 to attend a meeting of the Technology Corporation. Will inquired especially about the plans for our reunion next year to celebrate our Fortieth Anniversary, and he was delighted to learn that arrangements had already been made to foregather at East Bay Lodge, Osterville, June 4, 5, and 6, 1936, carrying out substantially the same program of nothing formal as we had four years ago at the same place. Will said that he had enjoyed our last one so much that he hoped the next one would be along the same line, and he would surely be present. Incidentally, he remarked that he had not realized previously what he had been missing in not attending all of the five-year reunions. He reported that the '96 bunch with the General Electric Company in Schenectady were well and happy and we could count on seeing them at the reunion. As a matter of fact Karl Pauly has already written that he will be there.

Although this year our Class will not have an official class celebration, the attention of classmates is called to the new plan of annual Technology reunions. Since the seating at the Alumni Dinner and

in Symphony Hall on Monday, June 3, will be according to classes, there will be a fine opportunity for you fellows to get together at that time, and everyone is urged to attend if possible.

Andy Green wrote the Secretary from the University Club in Chicago, the latter part of February, but he did not say much about himself, except that he was apparently on a vacation from his home in Dominica, and had landed in Boston on Christmas Eve. He must have gone through Boston very quietly, as no one heard about his being here.

Mort Sears has also been heard from. He has been in the General Land Office of the Department of the Interior for a number of years and his real work deals with mineral deposits upon public lands. Life with him is very smooth and regular. He does not find pleasure in attending Technology gatherings, because of difficulty in hearing, but he reads everything about Technology, and welcomes callers. If any '96 man should be in Washington, Sears will be happy to have him drop in the office, Room 4322 Interior Building. — Rockwell left on March 21 for his annual spring visit to his people in Tennessee and way stations. Further report on his trip will appear in the next issue.

A few high spots on the latest trip of Myron and Mrs. Fuller may be of interest. They sailed on the *S. S. Executive* from New York on November 20. On Thanksgiving day they ran into a 50- to 75-mile gale off the Azores. Landing at Casablanca in Morocco, they took a 200-mile ride in a big, modern bus to Fez, passing through forests of cork oaks, over a vast upland plain, and finally through barren mountains. They found the Arab city of Fez very interesting, with its old buildings, labyrinth of narrow, twisting streets, and tiny shops. From Fez they pressed onward 250 miles to Tangier, nearly opposite Gibraltar, passing through scenery much like that of Arizona, with ruins of ancient cities now and then. There they rejoined their ship, which had come over from Casablanca. Their next port was Ceuta in Spanish Morocco, and thence to Melilla. They next went into Algeria to Oran, a modern city with densely packed native sections. Algiers is built on a high esplanade, with elevators leading up from the harbor, the native quarters featured by buildings which meet overhead, and some so low that the travelers had to stoop to pass under. At Djidjelli, an almost deserted military post, there was not much to see outside of the clock tower on the hill. Tunis was reached by a six-mile canal through a shallow lake, and from Tunis one can ride by trolley to the ancient city of Carthage. The French have made many excavations to disclose the ancient civilization. From Tunis they crossed to Sicily, stopping first at Syracuse, where a Greek theater carved in limestone and a Roman amphitheater also cut in rock were interesting features. The catacombs are larger than those of Rome and honeycomb the hillside. Nearby is an underground secret church used by the early Christians. Catania, at the south foot of

1896 Continued

Mount Etna, has been invaded by lavas and shaken by earthquakes, but is still prosperous. A drive of 40 miles over the slopes of Mount Etna carried them past the lava flows of 1928, so vividly shown in America by moving pictures, and on to Taormina. They then went on to Messina, which has been rebuilt with modern buildings since the earthquake of 1903, and it was hard for the Fullers to realize that it was the same place they saw as a heap of ruins at that time. Practically nothing remains that suggests the catastrophe. A stop was made at Bipari to load pumice. The last stop in Sicily was at Palermo, and from there they returned along the shores of Spain and Portugal. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M.I.T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

Plan to Attend

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1900

The Cincinnati *Engineer* had a very interesting story written by Sumner Manley, chief engineer of the Procter and Gamble Company, giving an account of his activities while abroad. Excerpts follow: "There are so many English engineers in America it is probable that any account of my own experiences in England will be an old story to most people, but I had never been out of the States before, except to Canada, and I found something interesting, or amusing, at every turn.

"The quietness, speed, and smooth running of the trains were a continued reminder to me that there is considerable to be said in favor of light equipment. The freight cars, or goods wagons, were easy to move about our job later on, for most of them were four-wheeled and an ordinary load was 10 tons so that we could shunt them about with a horse, or six or eight men, quite easily.

"My first work at Newcastle-upon-Tyne, was to help organize and start construction of an addition to the factory of Thomas Hedley and Company, Ltd., which is affiliated with our own concern. These buildings are in part 100 years old, or more, and are on a steep bank that lies between the Tyne and the location of the old city walls which have mostly disappeared.

"In the construction of our buildings we found that we could not get heavy steel sections like Bethlehem girders or columns, but had to use built-up members, as the English mills do not roll such sections, due no doubt to the limitation on height that was everywhere evident.

"Skilled cement workers were almost impossible to obtain in Newcastle, which is in a district ordinarily given over to ship and machinery building and coal mining. The use of broken brick as concrete aggregate was common practice by the small contractor.

"While the Newcastle work was going on, we began getting ready for the Manchester job. This was completely new and

in an open field that had once been part of a country estate, Trafford Park. We advertised with indifferent results in the local papers in Newcastle for architectural engineers, but a few lines in *The Engineer* worked quite the other way. From 200 or more applicants, we found several excellent men. Nearly all the replies of interest were from men with London experience and I found out then that London was 'The City' and that all the rest of England was 'The Provinces.'

"The London County Council has a building code apparently as thorough as our largest cities, but it was different with our job. Although Trafford Park is in the Manchester district, our work came under the jurisdiction of the surveyor of the township of 'Barton on Irwell.' This is largely a residential district and the building code was obviously intended for dwelling houses, but we found the surveyor to be a very interested and progressive engineer, and I cannot recall any troublesome restrictions that he imposed on our work.

"Our construction presented the ordinary problems and was handled much the same as . . . in America. We bought our own steel erected, and the balance of the work was practically a lump-sum contract with a schedule of prices for additions or deductions. . . . We also placed such individual contracts as we saw fit.

"The equipment of the plant presented a little more trouble, and to handle this we took along two experienced engineers from our home office. We made it a point to purchase everything, as far as possible, completely erected. Given sufficient time, it had been our experience in Newcastle that this was far cheaper than to buy our material item by item and organize a construction gang of our own. Another reason why we did not try to handle all labor was the diversity of the trades employed. This was rather amusingly evident. Each contractor brought his own portable, wooden hut for his tools and for headquarters for his foreman. At one time we had 29 of these rather disreputable looking shanties spread all over the available space. We had a hut of our own and it was the cause of considerable comment, for we made it as neat and kept it as clean as we proposed to have the finished job, and none of the sub-contractors could avoid seeing the standards we required. It certainly helped.

"The depression in England was at its worst in the summer of 1932, and, as it had already lasted nine years, we naturally investigated closely the engineering firms we were dealing with. Nearly all of them had been established for a long time and the diversity of work done in the past was most interesting. The firm that built our tanks had made some of the castings for the old Stockton and Darlington Railroad and during the war had built one of the Mystery Towers. Our floors were put down by a concern that had also strengthened the old masonry of St. Paul's and the foundation of the Leaning Tower of Pisa. Some of our soap machinery was made by the same firm

that made the engines for the Great Eastern. Even familiar problems became interesting in their new setting and when my work came to an end, after two-and-one-half years, I found it harder to cut loose from the associations I had formed than has ever been my experience before." — C. BURTON COTTING, *Secretary*, 111 Devonshire Street, Boston, Mass.

Plan to Attend

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1901

The tributes to our late Class Secretary, Allan Winter Rowe, continue to appear. The following paragraph from a pamphlet prepared by a colleague of Dr. Rowe's and printed by the Boston University School of Medicine is worthy of repeating here: "To the steadily growing multitude of his friends and colleagues the swiftly fatal illness of Dr. Rowe has come as a profound and tragic shock. We cannot yet realize the dimensions of our loss. We need not sorrow for this large-souled, gallant gentleman himself, for, although cut down in his most productive period, into each of his years he had packed a full measure of zestful living and enjoyed accomplishment. His eyes and mind were always wide open. Few are so alive as he was; few, in longer lifetimes, achieve so much. For some last weeks he knew the expected outcome; he had work that he regretfully wanted to finish — 'something ere the end, some work of noble note, may yet be done' — but he accepted his sentence with a smile and with unflagging courage. No, we need not sorrow for him; but how can we help being sorry for ourselves, we who have lost such a wise and unselfish counselor, such a genial and stimulating companion, such a sturdy and loyal friend?"

Although our Class will not hold a reunion this year, on account of our 35th coming next year, I hope a goodly number will attend the alumni festival and reunion, June 3. We shall then have an opportunity to get together and make plans for 1936.

As I write these lines, the 1935 ballot of the Alumni Association is before me on which the name of Theodore H. Taft appears as a candidate for Council Representative at large. By the time this appears in print, I trust he will be duly elected. He is now Associate Professor of Heat Engineering at Technology.

I am wondering how many of our Class are now grandfathers. I don't walk with a cane as yet but had the pleasure of becoming a grandfather last summer. A number of years ago I ran into Henry R. Gilson on Boston Common and he told me then that he was already a grandfather. Possibly he is the first one of the Class to have that honor. Charles I. Auer writes: "Have a grandson who will enter kindergarten again at Los Cruces, N. M., having attended last year, but, still being too young for grammar school and desiring that he receive some sort of preliminary education, another term at kindergarten is before him." Are there any others?

1901 Continued

Edmond F. Brigham in answering the annual class questionnaire says: "No change other than general wear and tear increased by depression and the New Deal in place of square deal, and also my golf game isn't quite so rotten as it used to be whenever I save enough pennies out of the New Deal to play."

Carl F. Johnson is President of the California Conservationists and of the Fish and Game Development Association. He writes: "I am still flying my Wasp-powered Ryan cabin ship. I am continuing my organization of sportsmen throughout the State of California into a powerful group with considerable success. We now have 67 affiliated clubs with a membership of approximately 40,000 signed up, and an intensive program of education in fish and game matters is being carried on for the purpose of stopping the destruction of this great natural resource." — ROBERT L. WILLIAMS, *Secretary*, 109 Waban Hill Road North, Chestnut Hill, Mass.

Plan to Attend

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1904

The Annual Reunion of the Class will be held at East Bay Lodge, Osterville, Mass., on June 21, 22, and 23, and detailed information will be sent to you all in the near future.

You have already been advised by various communications that the Alumni Association is holding the first Alumni Day on June 3, 1935, and it is hoped that all members of the Class who can possibly do so will attend some portion of the events of the day. We propose to have a class luncheon on that day; details will be worked out and you will be advised in due time. It is hardly necessary for me to go into more detail in these notes with reference to Alumni Day as the General Committee handling these matters naturally can lay the details before you better than I.

I have received an announcement of the marriage of Robert M. Phinney on Saturday, February 2, to Miss Margaret Louise, daughter of Mr. and Mrs. Stephen Hubble Smith, at Sherburne, N. Y. Their address is 141 South Fitzhugh Street, Rochester, N. Y.

It is my sad duty to record the death of two members of the Class: Charles H. Stebbins of Melrose and W. De Witt Vosbury of Camden, N. J. Charlie Stebbins died at his home on February 1, 1935, after a brief illness, although he had not been in the best of health for many months. Charlie was one of our best-known and best-beloved members and, although conditions have made it impossible for him to be with us as much in the immediate past as in former years, we are going to miss him at future gatherings.

Stebbins was born in Malden, Mass., on August 9, 1880, the son of Edmund S. and Mary Stebbins. When he was about five years of age his family moved to Melrose, where he lived practically the remainder of his life. He attended the Melrose public schools and when in Melrose

High School he was active on the baseball and track teams, and, as we may remember, participated in those sports when we were freshmen at the Institute.

After he left the Institute he was for a time connected with the Pittsburgh (Pa.) Gas and Coke Works, in their Chemical Department, chemistry having been his training in the Institute. He then came back to Boston and for some years was assistant chemist in the Charlestown Navy Yard. During his service at the Navy Yard he was married on June 25, 1906, to Lillia Bradford of Reading, Mass., and about a year later left Melrose to assume the position of chemist with the Hodgman Rubber Company at Tuckahoe, N. Y., where he remained about a year. Returning again to Melrose, he entered the employ of the Avery Chemical Company, which was subsequently absorbed by the Atlantic Chemical Company, and was with this concern for several years until the company was dissolved. After some time spent in various temporary connections as salesman, he entered the employ of F. A. Houdlette and Son in 1922, where he acted in the capacity of sales manager. This was a Boston concern, engaged in the sale of wrought-iron pipe, and Charlie was connected with them for 10 or 11 years until the dissolution of the firm. Such is a brief outline of the activities of our classmate. We shall always remember his bright and cheerful personality and shall miss him sorely from our midst. He is survived by his wife and one son, Jarvis, who was born in July, 1914.

Phil Sweetser sent me the following clipping from the Philadelphia *Public Ledger* of March 4, 1935, which tells of the death of Vosbury: "W. De Witt Vosbury, 54, well-known engineer and member of the firm of Remington, Vosbury and Goff, of Camden, died in the Presbyterian Hospital last night from a blood infection which developed from a carbuncle.

"Mr. Vosbury, whose wife, the former Jane Coats Vernon, of Media, was granted a divorce last year in Camden Chancery Court, had been living at the Drake Hotel, this city, recently. He was a resident of Haddonfield, N. J.

"Mr. Vosbury was a member of the American Society of Mechanical Engineers and the New Jersey Society of Professional Engineers. A graduate of the M.I.T., Mr. Vosbury was born in Binghamton, N. Y. Funeral services will be held at 2:30 P.M., Wednesday, at Haddon and Lees Avenues, Collingswood, with burial in Harleigh Cemetery, Camden.

"In addition to his former wife, he is survived by a son, W. De Witt, Jr., twin daughters, Helen and Catharine, and three brothers, Clinton C. Vosbury of Westmont, N. J., Edward W. D. Vosbury of Fairfax, Va., and Lieutenant Commander Bronson P. Vosbury, attached to the U. S. Naval Station at New Haven, Conn."

In closing these notes, I venture to hope that I may see many of you at Alumni Day and also at our Annual Reunion the latter part of June. Best wishes for a pleasant summer. — HENRY W. STEVENS,

Secretary, 12 Garrison Street, Chestnut Hill, Mass. AMASA M. HOLCOMBE, *Assistant Secretary*, 8 Rosemary Street, Chevy Chase, Md.

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1905

What appeared to be a long, newsy letter from Phil Darling, II, turned out to be almost entirely about two '06 men with whom he had been consorting. Max Coe seemed to know something about NRA. We quote: "Tony Mathesius I recently pulled out of his bed at the Fraternity Clubs Building in New York at 6:00 A.M. to go and see the *Joseph Conrad* dry-docked at Todd's Basin. She, you know, is a miniature, full-rigged ship but 100 feet long, being sailed around the world by Alan Villiers ("Falmouth for Orders," "Grain Race," and so on). We saw her just as the floating dock was submerging, Tony aboard, I ashore, but we met later in Old Vienna or some such restaurant uptown. Tony is, as always, enthusiastic about everything. We must see that ship, though the only real boating experience Tony has ever had, so far as I know, was scraping barnacles off the bottom of my Frostbite tender last summer in Hamburg Cove while the rest of my party absorbed high balls on board the mother ship, the good catboat, *Mildar*." The Review editors say that we secretaries should send in news items of other classes and this is one: Take it away, Jim Kidder.

Maurice Landers, II, who organized a New York class luncheon on February 7, reports: "To reply to your letter which inadvertently became mixed with Bill Spalding's patent application for a perpetual-motion machine in which I have taken a half interest, one complete jury, good men and true, members of the Class of 1905 (to wit: Amberg, Bender, Edmunds, Fouhy, Gilbert, Green, Hill, Lombard, Merrill, Motter, Robbe, Spalding) accepted my call to glad hands and chopsticks at the Tech Club. After two hours and 23 minutes of animated deliberation, said jury brought in a verdict for a new trial for next May. By then (the NRA permitting) Lombard will be well started on the intricacies of setting up his new contracting project and will be ready for Fouhy, as specialist in engineering law, to get him out of trouble.

"Bill Motter agreed to take us all on his next trip to Chile provided Bill Green and Percy Hill will arrange with their respective companies, the Telegraph Company and Western Union, to cover the incidental expenses from their advertising budget. It is intended that this trip shall be made as soon after the '05 Class Reunion (probably on Long Island Sound) as Robbe, municipal engineer, can get New York City in condition to be left.

"Amberg gave us a dissertation on the intricacies of filing systems and Edmunds explained his latest developments for Crocker-Wheeler Company. Merrill of the American Commission World Power

1905 Continued

Conference tried to persuade Gilbert to leave Chase Pfizer, and Bender to leave Kenney Manufacturing Company, to build a new Siberian Railroad. — We closed the session with a vote of thanks to Hewitt Crosby '03 for the good work of the NRA, certain votes being cast with reservations." (But why a vote of thanks to '03? R. D.) It's yours, Fred Eustis.

"Technology Men in Action" and Club and Class Notes should always be read, for class news is often discovered. In the March Review the Secretary of the Technology Club of Panama brings George Bunker, VII, to light. His address is Box 5035, Ancon, Canal Zone. For 20 years or more he has had a Littleton, N. H., address and we have had no word from him. Now we see he has been kiting all over Central America for years. And a note on Will Beers, VII, shows him to be a contract-bridge expert.

And here's a letter on the paper of the Canal Zone Collectors' Club, Chapter III, American Philatelic Society, William H. Beers, Secretary, which says: "I am still at the Agua Clara Plant at Gatun but this month they have had me working three hours a day at Gatun and five hours at Mount Hope, Cristobal, helping with overhaul and concrete testing. It is dry season now (December to May) and there is lots of road building and house construction in progress while the going is good. Let me have Ayers' address. I might get up to California next summer, if I can get on a transport, and drive across the States."

Katharine Houghton Hepburn's, IV, early history may be obscure but her present activities are coming to light. On March 15 a luncheon honoring her and Margaret Sanger, founder of the Birth Control Movement in the United States, was given at the Women's City Club, Boston. A large group of notables was present. Later she spoke before several other women's organizations in and around Boston. Mrs. Hepburn heads the Women's National Committee on Federal Legislation for Birth Control with headquarters in Washington. While it was something worth fighting for, she was active in the Women's Suffrage movement.

"Ladies! Good News! Free. Rinso and Lifebuoy . . . we're calling at every home in Middletown." Another of Grafton Perkins', V, campaigns. Our last Lever Brothers free sample came from one of Grafton's associates while sailing in the Gulf Stream in 1932. And the Lifebuoy Shaving Cream lathered in salt water, Charlie Noble.

Mr. and Mrs. E. Leander Higgins, IV, were patrons of the Intercollegiate Glee Club Contest at the Municipal Auditorium, Portland, Maine, on March 1. For some reason, the Tom Estabrooks, V, who are back in Portland, seem not to have lent their support. That the Jim Barlows, I, were not on the program was not such a surprise.

Ten colleges competed, Tech getting fourth place. First was a little college in Connecticut where your Secretary is employed. In the 10 years he has been in

Middletown, Wesleyan has won the New England championship four times, the National twice; a good record for a school of 600. His son, a member of the present glee club, has a better voice and knows more about music, but gets no more fun out of it than the old man did.

Wesleyan was host to the New England Intercollegiate Swimming Association for its championship meet in March. Tech competed and got three points. One of these points was won by the breast-stroking son of our old friend and Tech showman, Kurt Vonnegut '08. We found the lad in the locker room and confirmed the relationship after the meet. Built on the lines of his father, there is no trace of the comical German accent of "Heine, an Innkeeper" in "The Chemical Maid." Here you are, Harold Carter.

We thought we had at last, *at last*, a real letter from Charlie Johnson, II. We've been working on him for several years. But it was only a statement of paid-up insurance or notification of daughter's birthday or something.

Full details of our Thirtieth Reunion will go out by post card, circular, news letter, or perhaps a revival of *The '05 Flivver*. Read, reflect, and reunite.

From Grove Marcy, II: "Charlie Hawkes, II, is now with Buckley and Scott Utilities, Inc., 570 Commonwealth Avenue, Boston. I do not know just what his title is, but I think it is in the line of coordinating their advertising and sales work. He seems happy and cheerful about the connection." Buckley and Scott are handlers of air conditioning, oil burners, service and fuel oil with emphasis on the service. Charlie's title is sales promotion manager and we wish him the best of success.

Grove continues: "I saw Ed Lorenz, II, about two weeks ago at Phillips House, where he was recovering from some sort of a remodeling operation on his hip. Some condition had developed, not from long-distance running, he insisted, but maybe from playing golf, that permitted it to slip out of joint on occasions, which was inconvenient, to say the least, as it once occurred in a customer's office and sort of surprised them. So he decided to have a shim or two taken out, or to have it brazed, or something. Everything was going fine and he expects to take up skiing next. I had not seen him since graduation. Found him a little heavier (as who isn't) but otherwise not much changed and I enjoyed my call on him and his wife (daughter of Professor Norton) very much. They live in Hartford, where he is Engineer with Hartford Empire Company, makers of glass-working machinery and glassware. He said they had had a great rush on beer bottles for a while. Now whisky bottles are going very strong."

"Sid Strickland, IV, has some high title in the housing plans, or slum clearance, or XYZ federal activity that is either going to make over or blow over our fair suburb of South Boston, depending on which day you look at the paper."

Lovell Parker, I, with two associates, has written "A Summary of the British Tax System with Special Reference to Its

Administration" which has been printed for the use of the joint committee on Internal Revenue Taxation, of which he is chief of staff. The report brings out that many features of British practice are the practical developments of a century of experience and are worthy of consideration by any government employing this form of taxation. The keynote of the British revenue administration is decentralization. The assessment and collection of taxes there have been kept practically current, appeals are comparatively few, and taxpayers are well satisfied with the fairness and efficiency of the system. There is no plague of old cases, as with us, and no great mass of litigation. Fundamental to these characteristics of the British system, according to our classmate, is the fact that "the inspectors are carefully selected civil-service officials, and well trained after their entrance into the service." Tenure is entirely independent of political considerations. Promotions to the highest positions are made on the basis of experience and individual merit. It is an excellent report, worthy of our careful study. — ROSWELL DAVIS, Secretary, Wesleyan Station, Middletown, Conn. SIDNEY T. STRICKLAND, Assistant Secretary, 20 Newbury Street, Boston, Mass.

*Plan to Attend
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On June 3*

1906

Your Secretary regrets the lack of class notes in the March issue of *The Review*. Readers will appreciate that sometimes the notes have been quite limited but at least we have always tried to have the Class accounted for even though it meant exercise of your reporter's imagination in some instances. At the time the January notes were due the Secretary was confined to his home for a few days with a cold and, therefore, no notes were forwarded in time for that issue.

The *Arlington Advocate* of February 22 (your scribe's home-town paper) contained an account of the wedding of Miss Persis Charlotte Eames, who was married to Mr. Arnold V. Pent, Jr., Saturday, February 16, at the home of her parents, 6 Grand View Road, Arlington. The groom's father, Reverend Arnold V. Pent, Pastor of the Calvary Tabernacle, performed the single-ring ceremony. Miss Eames is the daughter of D. D. Eames, II, who is a consulting engineer at 739 Boylston Street, Boston. Eames was with Lockwood, Greene Engineers, Inc., in Boston for some time but a few years ago started in business as a consulting engineer at the above address. To return to the wedding, the account continues as follows: "The ushers were four brothers of the bride, Ronald D., Paul F., Eliot N., and Seth Eames. The bride attended Arlington High School and the Wheelock School. The groom is a graduate of Wheaton College, Ill., and the Philadelphia Institute of the Bible. The wedding trip will include a visit to Washington."

1906 Continued

Professor Locke advises that Ray Barber, III, is acting as consulting engineer for the Northern California Mines Company which is carrying on active work at Junction City with five hydraulic giants (whatever they are). — The Secretary is pleased to acknowledge picture post cards from certain fortunate members of the Class who have taken southern trips this winter. It may be a complex on our part, but it seems as though when Boston's winter weather is on its worst behavior we always get a post card from Ralph Patch advising us of the green fairways in Florida. This fact makes us gaze out of the window and reflect momentarily upon the hardships of us semi-public servants who do not indulge in the luxury of mid-winter vacations. On March 12, we received a post card from the Philbricks (H. R., VI), mailed at sea on the RMS *Lady Drake* of the Canadian National Steamship Lines. The stamp and picture on the card indicated that the trip had included the Barbados. The message was as follows: "In spite of a bad sunburn, beg to report that I am still alive and kicking. Sorry to miss the annual meeting again. Regards from the Philbricks." Notwithstanding the Secretary's mingled emotions upon receiving such epistles, we appreciate them and, as previously stated, we are glad to hear from classmates. More power to these fortunate ones! May the time come when we will have a 1906 mid-winter reunion in Bermuda.

Philbrick's reference to the annual meeting reminds me that there were four classmates present at the informal dinner held at Walker Memorial on Saturday, February 9. They were Sam Nash, II, Sherman Chase, XI, the Assistant Secretary, and the Secretary. Nash is an Inspector with the U. S. Government, making his headquarters at the Charlestown Navy Yard, but his work carries him to various New England states where material used at the Navy Yard is manufactured. Sherman Chase is with Metcalf and Eddy, consulting engineers of Boston, and he reports that they have been unusually busy. In regard to the other two members of this loyal four, there is no change to report relative to their vocations. Incidentally, Ned Rowe has done an excellent job as the class representative on the Alumni Council, and classmates will be interested to know that he has consented to continue in this position. At the conclusion of the dinner the members ascended to the gymnasium of Walker Memorial to witness an exhibition of athletics by some undergraduates. We were particularly pleased to see young Charlie Wetterer '38 participate in one of the wrestling bouts. Take it from us, this young man is quite a husky and held his own very nicely against an apparently older opponent in one of the heavy-weight classes.

Professor Locke is in receipt of a letter from Sid Carr, one of our Hawaiian classmates, which refers to Bill Furer as follows: "His ailment is a form of heart trouble and his doctor advised a complete rest in the hospital. He has recovered sufficiently to leave the hospital and

sailed from here on December 14 to visit his sister in Sheboygan, Wis., during the holidays. I understand that he was East in January to see his brother Captain Furer, U.S.N., stationed at Philadelphia. He is expected to return here about the end of this month." Classmates will be sorry to hear of Bill's ill health and will wish him a speedy recovery.

In closing, just a reminder that another five-year anniversary will be upon us in 1936. Please be sure to keep it in mind and look forward to attending the 30-Year Reunion which will be celebrated early in June next year. — J. W. KIDDER, Secretary, Room 1001, 50 Oliver Street, Boston, Mass. EDWARD B. ROWE, Assistant Secretary, 11 Cushing Road, Wellesley Hills, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1907

In view of the fact that this issue is going to about 6,000 men who do not regularly receive it, we are particularly sorry that our class notes are not filled with interesting news regarding a large number of classmates. But in spite of efforts, the best we can offer this time are the comments which follow: Frederick W. Amadon is with the Interstate Commerce Commission at 12th and Constitution Avenue, Washington, D. C. Charles E. Baker, who has been in Connecticut for some time, is at 66 Orient Avenue, Melrose, Mass.

On March 16, the 133rd anniversary of West Point, Lieutenant Colonel Stuart C. Godfrey, of our Class (West Point '09), now First Corps Area Engineer Officer, was toastmaster at the annual dinner of the West Point Society of New England held at the University Club, Boston. We have mentioned Stuart several times in our notes during recent months. Although a West Point graduate and an army man, and with our Class only during our sophomore year, he takes an active interest in our class affairs.

On the front page of the Boston *Herald* of February 26 appeared the headlines, "Yale Economist Sees Price Rise — Professor Hastings Warns of Record Jump Because of Gold Decisions." A glance at the first few lines of the 12-inch column that followed showed that the reference was to our own Hud Hastings, "expert on industrial administration." Speaking before members of the New Haven Advertising Club on February 25, he attacked the then recent decisions of the United States Supreme Court in the gold clause and gold certificate cases, and predicted the most drastic rise in prices this country has ever experienced.

Among the other prominent men who were appointed by Governor Curley of Massachusetts on March 21 as members of his enlarged "brain trust" was Ralph Hudson, as one of the subcommittee on public utilities. Ralph, as probably everyone in the Class knows, is a prominent and successful member of the Technology Faculty, being Professor of Electrical Engineering and in charge of Course IX.

Our Class is honored in having one of its members, Ed Moreland, chosen to be President of the Technology Alumni Association for the coming year. — Seldon E. Rockwell is with the United States Reclamation Bureau, located in the Custom House at Denver, Colo. — BRYANT NICHOLS, Secretary, 12 Newland Street, Auburndale, Mass. HAROLD S. WONSON, Assistant Secretary, Commonwealth Shoe and Leather Company, Whitman, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1908

The Class was represented by the following members at the Annual Alumni Dinner on February 9: Damon, Ellis, Newhall, Hatch, Kedy, and Towle.

We have the following changes of address to report: Maurice E. Allen, care of Union Bank and Trust Company, Hill at 8th Street, Los Angeles, Calif.; Robert B. Arnold, 365 Lexington Boulevard, Richmond, Va.; G. William Bailey, 39 Hillside Road, Northampton, Mass.; Frank K. Belcher, 2775 North 16th Street, Milwaukee, Wis.; Viggo E. Bird, The Connecticut Power Company, 266 Pearl Street, Hartford, Conn.; Benjamin Bullard, Bullard Electric Company, 107 West Laurel Street, Garden City, Kansas; George R. Cooke, 64 Country Club Lane, Detroit, Mich.; Herbert C. Elton, 34 Oldfield Road, Fairfield, Conn.; George T. Glover, The Deisel Wemmer Gilbert Corporation, Lima, Ohio; Louis S. Gordon, Room 1602, 393 Seventh Avenue, New York City; Philip J. Hale, 1314 15th Street, North West, Washington, D. C.; Melville B. Hall, 720 Radcliffe Avenue, University City, Mo.; William R. Heilman, 3419 North Penn Street, Apartment B-3, Indianapolis, Ind.; Lieutenant Colonel John Mather, 3107 Garfield Street, North West, Washington, D. C.; Francis H. McGuigan, Jr., Bond Department, Prudential Insurance Company, Newark, N. J.; George M. J. MacKay, American Cyanamid Company, 30 Rockefeller Plaza, New York City; Harold E. McPhee, 36 Summer Street, Framingham, Mass.; George M. Nauss, 5315 Fernpark Avenue, Baltimore, Md.; Everett H. Newhall, 39 Lincoln Street, Melrose, Mass.; Hal M. Radford, 729 Coventry Road, Berkeley, Calif.; John A. Remon, The Chesapeake and Potomac Telephone Company, 725 13th Street, North West, Washington, D. C.; Allan Seymour, Norton Company, 4732 Stenton Avenue, Philadelphia, Pa.; Robert B. Todd, Box 3076, St. Petersburg, Fla.; William H. Toppan, 23 Herbert Avenue, White Plains, N. Y. — H. LESTON CARTER, Secretary, 185 Franklin Street, Boston, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1909

As this issue of The Review is going to a number of men who do not regularly receive the magazine, I am taking this

1909 Continued

opportunity to extend to you the greetings of the Class of 1909 and to say that I should be most happy to receive, at any time, a word or two about you or your family, so that I may pass the information on to the others of our Class. I know from my own experience that the class news adds the personal touch to any alumni publication. The function of the Secretary is to act as clearing house for class information, but I need your help.

From Paul Wiswall comes the following news: "Yesterday (March 23) we had about 20 men at luncheon at the Tech Club to meet Dr. Bush '16. Dr. Bush wanted to know what he should talk about. The consensus of opinion always seems to be about the Institute and how things are going in Cambridge. It was a good report that we heard; just the kind of report, in fact, that might be expected of such men as Dr. Compton and Dr. Bush, not to mention our old sidekick, Horace Ford, and Lobby '17 and the other men who are in the important posts at the Institute. Our luncheons, held twice a year, have taken new interest because we have been able to get some of the key men at Cambridge to address us. We have a promise from Dr. Compton himself to be in New York in October at our fall luncheon. One of the conspicuous absentees was Jim Critchett. Jim is always on hand. This time he was away for an excellent reason; he was in New Orleans being inducted as President of the American Electro-Chemical Society. To all of us who know Jim, this honor will be carried well. The Class wishes him well. Word came from Tom Desmond's secretary that he is in Florida completing his convalescence from his illness last spring. I judge that Tom is making good progress and the good wishes of the Class are with him. Ridsdale Ellis is just back from several months in England visiting his mother."

This month I was overjoyed to hear from four of our number, one of whom — Paul B. Lord — holds the long-distance attendance record for the Twenty-Fifth Reunion. Paul has come back to the States from Santa Barbara, Mexico, where he has been for many years and is now located at El Paso, Texas. He says: "I am continuing in the employ of the same company, that is, the American Smelting and Refining Company. It is true, however, that the scope of my work will be somewhat changed inasmuch as my headquarters and residence will be in El Paso. The nature of my work will be such that I shall be more confined to an office chair, to which I am trying to become accustomed. I expect, however, that I shall make fairly frequent trips into Mexico visiting some of the mining units in the northern part of the country. You may well appreciate that Mrs. Lord and I left Santa Barbara to come to El Paso with rather mixed emotions in view of the fact that we have spent something over 13 years in Santa Barbara and it had become very much like home to us. On the other hand, there will be many advantages gained by living in the United States, and I expect that we will become

adjusted to the change. Now that I am in El Paso I shall be very glad to have any of the '09 men give me a ring — 1112 Mills Building — any time they may happen to be in the city."

Harold McCready, since graduation, has worked in one capacity or another for the Union Switch and Signal Company and is now assistant eastern manager with headquarters in the Empire State Building, New York City.

Jack Moses writes: "We are still doing business at the same old stand, and have been successful in bringing our company through, at least until the present time. I was going to say 'through the Depression', but no one will guarantee me that the Depression is over. We are now doing business on a 1929 basis, with the exception of prices, and hope gradually to get them back where they belong."

In response to my inquiry regarding change of address, I received the following interesting letter from Captain Lee S. Border: "I am now on duty in the Shore Establishments Division of the office of the Assistant Secretary of the Navy. I also have additional duty in connection with certain work in the Bureau of Construction and Repair of the Navy Department. These duties were taken up in June, 1933, and are concerned primarily with personnel, material, and work loads at Navy Yards. Many miscellaneous matters require attention in this connection. Prior to coming to Washington this time for duty, I had been force constructor on the Staff of Commander, Battle Force, U. S. Fleet, on about two years' sea duty. Prior to that, I had been chief planning officer for several years at the Puget Sound Navy Yard, Bremerton, Wash. Before coming to Bremerton the last time, I had been superintending constructor for the building of the six U. S. river gunboats by contract at Shanghai, China, this position having lasted about three-and-one-half years. My promotion from Commander to Captain in the Construction Corps occurred on July 1, 1928."

At the annual meeting of the Boston Society of Civil Engineers held on March 20, 1935, Arthur L. Shaw, member of the firm of Metcalf and Eddy, received the Sanitary Section Prize awarded annually for the best paper of the year. Shaw's paper on the Newton High-Level Sewer was presented at the March 7, 1934, meeting. — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. *Assistant Secretaries*: PAUL M. WISWALL, MAURICE R. SCHARFF, New York; GEORGE E. WALLIS, Chicago.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1910

The plans for the reunion are shaping up and probably before this number of *The Review* is published, you will have had a letter describing the Twenty-Fifth Reunion in detail. Herb Cleverdon, Chairman of the Committee, has written a great many letters and received a number of replies, almost uniformly enthusiastic.

Maurice Chapin is working on the Providence crowd, Larry Hemmenway, Dick Goodwin, John Ahlers, and Phil Burnham are working on the New York contingent. Cliff Hield in Minneapolis is going to come if he can make it, and he is working on the local group. He claims that Portland, Ore., St. Louis, Mo., and Corinth, Miss., are not in his immediate neighborhood. Red Wells is coming from Royersford, Pa., and Carroll Benton and Guy Harcourt expect to come up from New York. We hope to have an attendance of over 100 and make our silver anniversary one that we shall always remember. — DUDLEY CLAPP, *Secretary*, 40 Water Street, East Cambridge, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1911

Our hats are off to Heinie Zimmerman, IX, 1911's gift to the Corporation! You all remember how he joined our Class after receiving his Ph.B. at Franklin and Marshall in 1908 and by sheer personality and charm was soon one of the active members of the Class. He stayed for three years on the staff and then began his meteoric rise with the American Sheet and Tin Plate Company, subsidiary of the United States Steel Corporation, which has landed him now in a Vice-President's berth with U. S. Steel. We are proud of you, Zim!

An orchid also to John Taylor Arms, IV, called the "Paganini of etching," who recently celebrated his 20th anniversary as an artist with an exhibition at the Kennedy Gallery in New York. Says an Associated Press dispatch of March 9: "Arms, President of the Society of American Etchers and a member of the American Academy, is a thorough conservative. He prefers architectural subjects, particularly the lacy detail of medieval churches. He works like a jeweler, spending many months on a plate."

"His familiar 'American Cathedral' — a view of the Woolworth Building through the arch of the Municipal Building — and 'The Enchanted Doorway' are some of the triumphs of human skill over the etching needle and plate."

"Seventy-four of the 170 plates to which Arms has limited himself in 20 years are of churches, but in such New York subjects as 'West 42nd Street' and 'Cobwebs' — a street under Brooklyn Bridge — he shows feeling for the dramatic qualities of light and shade as well as mastery of composition."

Professor Gordon Wilkes, II, speaking on "Infrared Photography" to the Eastern Association of Physics Teachers at M.I.T. on March 9, photographed a man with invisible light, for the visiting teachers, to demonstrate the properties of infrared photographic film.

We had a fine dinner meeting of the Worcester County Alumni Association of M.I.T. in mid March, with Fred Daniels, VI, Hal Robinson, I, and the writer comprising the '11 delegation. Only a meeting of the Gardner City Council, of which

1911 Continued

he is now President, kept Stan Hartshorn, II, from attending. And speaking of Worcester, Hal Robinson, a member of the City Planning Board, has accepted an appointment as special lecturer at Worcester Polytechnic Institute to give a course in "City Planning."

The following appearing in the Worcester *Telegram* recently will interest you: "It was the night of the Lily Pons concert at the Memorial Auditorium. Slush was an inch deep and rain pelted down in fine shape when the concert was over. F. Harold Daniels raced out from the Harvard street door and to the Daniels car. Sheltered by an umbrella, held by Mrs. Daniels, F. Harold worked furiously to unlock the car. It just wouldn't unlock. Neither diplomacy nor force would open the door. You know how it is when husband and wife get together under such circumstances. Quiet, harmony, and good feeling all around. It was so this time until the Mrs. said: 'If you'll move down two cars and try to get into our own it may be better.' He did. It was. And that's that."

One more Worcester item: John Urquhart, XI, of the International Shoe Company of Manchester, N. H., dropped in here at the Bancroft for lunch recently and we had a fine renewal of old times. To paraphrase: "Come thou, and do likewise."

At last I have in some manner roused the "Write to Dennie" campaign into activity again; result: some nice letters to quote from here. First, a fine letter from Rudolph Emmel, III, who has returned to his home in Hingham, Mass., after interesting adventures and tasks, of which he says: "My experiences since last I saw you have been quite varied. Believe we ran across each other somewhere about the end of '27 or early in '28. I went to Peru in February, 1928, to look at some gold mines in the Parcoy district, well into the interior, returning three months later to the States. The trip was most interesting, over the first two main ranges of the Andes and well up on the third — crossing the Marañon canyon, about two miles deep, on the way."

"In July, 1928, I went to Guanajuato, Mexico, for the balance of the year. This district is one of the most picturesque in Mexico — a natural for artists — and endowed with a climate second to none. It has been one of the three largest silver producers of the world, but remaining ores are of such low grade as to put most of its glory in the past."

"From then until last November, practically six years, I was with the American Smelting and Refining Company, first as superintendent of the copper mine at Quiruvilca and the coal mine at Callacuyan. These are at the top of the westernmost range of the Andes at an elevation of 13,000 feet. We mined some 700 tons of copper ore per day and enough coal — about 100 tons of anthracite — to do the job of smelting and to cover other local needs. From May, 1931, to June, 1933, I was at Pataz, in charge of a gold mine, and for a year thereafter in Takwa, Gold Coast Colony, in charge of another gold

mine. This is low, swampy country in contrast with the high elevations where we had previously lived. Most of our white neighbors were British and really the Britisher is far ahead of the American in (1) governmental administration, (2) financial matters, (3) understanding of world politics and policies."

"The bright spot of the last year was our trip home, as my wife and I took two months in Europe, our first visit to that part of the world. We spent one month in Spain — a charming country to anyone who speaks the language and understands the customs of the Spanish race. From Barcelona we went directly across eastern France to Strasbourg, now French in name at least. We entered Germany at Kehl and covered lots of ground, with much time at Berlin, finally sailing from Hamburg for New York. We found Germany equally delightful with Spain and considered the month there well spent. Southern Germany is really beautiful. While there, we had the pleasure of meeting Robert Ball '91, his wife, and daughter. He is a lecturer in civil engineering at Cambridge University, and we did a little bit of the Black Forest together. We also got a glimpse of the famous Führer, Adolf Hitler, in Berlin, apparently the idol of all classes of his countrymen."

"Since returning to the States in November we have been mostly around New York and Boston, but took one trip to Lynchburg, Va., where our daughter, Elsie, is a junior at Randolph-Macon College. It is a first-class women's college, with a fine faculty and plant, and beautifully situated. We also visited friends at Jefferson, N. C., before returning North. Also, I had a lovely visit with Frank Smith, III, in New York recently. Tell all my friends to address me at Hingham, Mass., until further notice."

Again to paraphrase: "What is so rare as a letter from Jim Duffy, VI, then if ever comes perfect phrase." The letterhead: "Business Counsel, 38 South Dearborn Street, Chicago, Ill." The subhead: "Attorney-at-Law, Tax Specialist, Investment Counselor, Certified Public Accountant." The letter: "It is said that the kick of a cow started the great Chicago fire, and it was the little item regarding your return to Worcester which roused me to write to you after an absence of nearly as long as that of Rip Van Winkle. However, due to a chap named Gillette, my physical appearance is not so greatly changed as his. I am indeed glad to learn that you are returning to Mrs. Denison's ancestral home, and to the town where you and Charlie Barker and I had so much fun so many years ago. And I might add that I think that the Bancroft is to be congratulated. [Thanks, Jim, for them kind words.]"

"Not much to report about myself. I am still peddling 'dope,' but since Al Capone made this town the capital of the beer peddlers, the attention of the authorities has been so concentrated on his activities that I am not molested, and as a consequence can thumb my nose at Harry Hopkins and make folks believe that the wolf at the door is really a police dog."

"I have noted that 1911 is not the only class whose members carry dry fountain pens when it comes to writing to the Secretary. The trait is generic, as the biologists might say. In view of the fact that next year is our silver anniversary, might it not be a good idea to run in the class notes a very brief *résumé* of the present business or professional activities of our classmates. To me such information would be most interesting, and a continuing appeal could be made for readers to submit their own to complete the record. The items could be very brief and of such a character that even the most modest of us would not hesitate to submit our story. If some are presidents of big companies and some have no title but 'Dad' — what's the difference as long as we are healthy? If we get a few more Wheeler Reayburn bills, there won't be any big companies and the present presidents may be in the ranks of the unemployed!"

Jim's idea of condensed data about classmates in the notes in next year's volume is fine and in that connection you and you and YOU will surely want to order, if you have not already done so, a copy of the new Register of Former Students, due to appear in July, giving you the latest addresses for all Alumni."

Royal Barton, VI, the lucky bum, wrote me a mean letter from Miami Beach on St. Patrick's Day — which by the way is my wife's birthday and I spent an enjoyable week-end at Yarmouth, Maine, with her and our youngsters — and when I say mean, I mean mean. He is down there looking after some Electric Bond and Share properties and writes: "I sit here now and look out over the beach, well filled with bathers. I shall be in the water soon myself. It's hard to take, this life!" Seriously, he wrote to tell me of the activity there in the hotels and to wish me luck here in Worcester, he having really entered the utility business through what has now become the New England Power Company."

Ted Parker, I, gets to Worcester occasionally on project work as State Engineer of the PWA. He told me that in mid March one of his Wellesley Hills neighbors walked in bringing a cousin of his and it turned out to be Vic Willis, I, who, like Parker, is working for his Uncle Sam, but in the Treasury Department, building post offices. Ted says Vic has "changed very little and has all his hair (how do they do it?)."

Don Stevens, II, dropped me a few lines the other day enclosing a clipping telling of Bob Haslam, X, becoming general sales manager of the domestic subsidiaries of the Standard Oil Company of New Jersey. Don added: "I have been devoting about half of my time the last two years to local, county, and state tax work as head of various taxpayers' associations. I am also tied in with the National Industrial Conference Board and National Association of Manufacturers on Industrial Relations Policies." In between times he is still Vice-President of the Okonite Company at Passaic, N. J.

New addresses: Harry Alexander, II, formerly with Seiberling, now with

1911 Continued

Goodyear Tire and Rubber Company, Akron, Ohio; Bob Anderson, III, Suite H, 106 North Central Avenue, Phoenix, Ariz.; Charles S. Ashley, Jr., III, formerly at St. Louis, now care of Maryland Casualty Company, 107 William Street, New York City; Charlie Bartlett, II, still with Newport News Shipbuilding and Dry Dock Company, but now living at 70 Post Street, Hilton Village, Va.; Professor Joseph Murdoch, XII, Department of Geology, University of California at Los Angeles; and Hank Smith, X, formerly of Sweeney, Clift and Smith, now with Michigan Pipe Company, Bay City, Mich. Kes Barr, II, is now with American Nickelfoid Company, 16 East Broad Street, Columbus, Ohio, while Wes Seligman, III, has moved his Seligman and Company offices from 245 Fifth Avenue to 240 Madison Avenue, New York City. Other address changes are: Bill Buckley, I, 41 Freeman Street, Wollaston, Mass.; Walt Hildebrand, I, 610 Laurel Avenue, Wilmette, Ill.; Alexander Nimick, X, 301 Chestnut Road, Edgewood, Sewickley, Pa.

Now you see, mates, what an interesting set of notes we can have when you write to Dannie. These notes will appear just in advance of the big Reunion Day at Cambridge, June 3, and that's when I hope to see a lot of you in person. — ORVILLE B. DENISON, *Secretary*, Hotel Bancroft, Worcester, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival
On June 3

1912

On the evening of March 15, when the newly organized M.I.T. Club of Northern New Jersey held its initial meeting, with an astounding showing of over 300 alumni residents of this territory, our Class was also present and accounted for. We sat down together at our own table with the following members around the board: H. H. Griffin, II, L. A. Mathews, VII, R. J. Wiseman, VI, H. H. Brackett, VI, H. C. Damon, IV, and D. J. McGrath, I.

This was the first we had seen or heard from Griffin in several years, and his proudest boast is that he has five children. However, good man though he is, Grif is not competing with M. Dionne. The Griffin children range from the eldest son, age 19 years, to the youngest daughter, 19 months. In the world of business endeavor, Grif is interested in trying to develop and put on the market a new form of wood veneer. He showed us some samples which seem to have some remarkable properties of toughness and flexibility. We all hope that this is a million-dollar idea and that Grif cashes in on it. — H. C. Damon, IV, was another stranger, as far as this column is concerned. He is in the structural steel business, in Paterson, N. J. (address 637 East 25th Street) but the goings-on at the meeting were so lively we were unable to work on him for any more news.

A few weeks ago, Elliot W. Tarr, VI, on a business trip to New York, dropped in for a little visit. — Also, we can report a recent 'phone call from Jesse F. Hakes, I, who occasionally leaves Baltimore long enough to pay a hurried business visit to New York. Hakes is still carrying on the business he launched some few years ago, and is holding his own in spite of the depression. He reports having played golf, not so long ago, with David J. Guy, I, who is located in Washington, D. C., where he is connected with the United States Chamber of Commerce. Guy had just recently been through an appendicitis operation, but is reported as being quite O.K. again.

We were saddened to note the passing of Harry P. Ferguson, XI, as reported in the March Review. Hakes said that he had a short note from Mrs. Ferguson stating that her husband had died on January 16, 1935, the victim of a brain tumor. Ferguson had been located in Springfield, Ill., where he was chief sanitary engineer of the State Department of health.

Meeting or hearing from some of the old friends this way, occasionally, makes us just a little sentimental. Time is flying. Already many of our classmates have passed on, and it is inevitable that the number of the living members will decrease more and more rapidly with each succeeding year. We cannot refrain from speaking, writing, and urging our members, if they still retain any interest in or fond memories of days long gone by, to correspond a little more with the Class Secretary, or Assistant, and to try and plan to attend our future reunions. The new program of annual alumni reunions is a good one. We are all for it. But we must not let it overshadow our need and desire for our own greatest of all reunions, our Twenty-Fifth, in 1937.

Many of you who do not subscribe regularly to The Review may be quite out of touch with us and with other members of the Class. Because this issue is being sent out to many non-subscribers, your secretarial staff is taking this opportunity to urge all classmates to subscribe to The Review, to read the class notes, and to write to Shep or Mac. Don't make us wait until we have to write your obituary before we hear anything from or about you. — FREDERICK J. SHEPARD, Jr., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, McGraw-Hill Publishing Company, Inc., 330 West 42d Street, New York, N. Y.

Plan to Attend

Technology's Homecoming Alumni Festival
On June 3

1913

The absence of notes from the March Review produced one very interesting protest. It brought from E. C. Gere, who is now a Captain in the Quartermaster Corps of the Army, a strong and rigorous protest. Included in this, however, were some interesting facts concerning Gere's work in the army. The following is an

excerpt from his letter: "Even though I am a lowly member of the Class, I decided somebody had better show his head, so why not I? After four years in the Quartermaster General's Office in charge of the Repair and Utilities Branch and part time in charge of the New Construction Branch, I moved to Langley Field, Va., as Constructing Quartermaster supervising the construction of officer's quarters, warehouses, roads, bridge, and chapel at that post and Fort Monroe. Last fall I came to Washington as a student in the Army Industrial College under the Assistant Secretary of War. I have just been informed that next fall I will be a student at the Army War College after which I should be fairly well educated. I am married, have three children, two of them sons, one of whom is four months old. Who is next?"

A notice has come to our desk that W. L. Whitehead, who in his spare time is a lecturer at the Institute on geological problems, has just returned to Cambridge from mining examinations in Cuba, California, and Utah.

One of the Boston papers carried an interesting article recently on the abilities of Mark Reed, who has just received considerable acclaim as a writer of plays for the stage. The following is an excerpt from the newspaper article: "When as a boy in Chelmsford, Mass., and a student at M.I.T., Mark Reed trudged through snowbanks mountains high, such snowbanks as only a New England winter knows, he used to dream of the possibilities of drama in snow and ice.

"And when, with two Broadway successes behind him, he sat down to write a comedy for Dennis King, he conceived the idea of setting 'Petticoat Fever' amid the snow and ice of Labrador. The more superstitious among his confreres opined that there must be some kind of a jinx on using cold countries as locales, for nobody, or practically nobody, had ever done it."

Larry Bevan has deserted the Massachusetts State Department of Agriculture and has transferred his interests to the New Jersey Agricultural Experimental Station at New Brunswick, N. J. — Silas H. Champlin has left California and is now associated with the Heekin Can Company, Norwood, Ohio. — Dr. G. E. Harmon has left Cleveland and has become attached to the Chicago Board of Health with offices at the Chicago City Hall. — South Natick is the new residence of Edward A. Hubbard, having moved from Wellesley.

John W. B. Ladd has left Mount Kisco, N. Y., and is associated with the Bard-Parker Company, Inc., Danbury, Conn. — Another public health officer in the Class has changed his location. Malcolm Lewis has just moved from Beaufort, N. C., to Washington, D. C., and is still attached to the U. S. Public Health Service. — Charlie Thompson has moved from Newtonville to his new house on Westfield Road in West Newton.

Another pedagogue has apparently come to the ranks of our Class. Lindsey Whitehead is a Professor in the Depart-

1913 Continued

ment of Civil Engineering at the Penn State College. Along these same lines, it is pleasant to add that your Secretary had a pleasant chat while in Pittsburgh with Frederick Evans. Evans, as you know, is a Professor in the Department of Civil Engineering at Carnegie Tech. — A. L. TOWNSEND, Secretary, Room 3-435, M.I.T., Cambridge, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1914

Last June, just 20 years after we departed from Rogers' steps, we held the largest gathering of the Class since graduation. The attendance at these regular five-year reunions has always been good. Our own five-year reunions, unfortunately, have always been a year preceding the Technology five-year reunions. In spite of this anti-climax, we have likewise had good attendance at the all-Technology gatherings. This has not been the case for all classes, and in order to work out a more equitable plan an experiment is being tried of abandoning the five-year, all-Technology reunions and substituting for them an annual Alumni Day. To be sure, those classes holding their five-year reunions are expected to have a much larger attendance at these annual Alumni Days than the off-year classes. Nevertheless, a program is going to be arranged each year that will make it worth while for all who can do so to attend Alumni Day.

As this is the regular year for a five-year, all-Technology reunion, it would be expected that there would be a sizable attendance from 1914. In addition, our Class has been active in fostering the new plan. It is incumbent on us, therefore, to make a special effort to see that this first Alumni Day is particularly successful. You will find details of the general plan elsewhere in this Review. You will also receive a notice within a few days direct from your class officers. Make your plans now to be at Technology on June 3.

Just one more point before noting a few news items. Less than half of our Class are paying members of the Technology Alumni Association. While it is recognized that in times of financial disturbance we must all watch our expenditures carefully, the support of the Technology Alumni Association is well worthy of every former student. For one thing, you receive *The Technology Review*, which in itself is a popular scientific magazine worthy of your attention, and which contains, in addition, monthly notes regarding the doings of your classmates. Quite in addition to the Review is the larger work of the Alumni Association in aiding to keep the Institute itself the outstanding technical school of the country. If you are not a regular member of the Association, why not try a membership for the coming year, which begins July 1?

Charlie Fiske makes frequent trips around the country and on these trips often runs into classmates. At Dallas he

recently saw Charlie Olesen, who is in the engineering department of the Oil Well Supply Company, a subsidiary of the United States Steel Corporation. Charlie has three daughters but as yet has no son to send to Technology. Also in Dallas are Peatross and Brotherton.

While in St. Louis, Charlie saw Phil Morrill, who is chief engineer for the Bemis Bro. Bag Company. Phil has been particularly busy lately in connection with the processing tax involved in the manufacture of the product of his company, and just to remind us all how old we are getting, Phil has a daughter who is entering college this fall!

While in Philadelphia recently your Secretary talked with Buck Dorrance and outlined Alumni Day plans. He also had a pleasant talk with Gordon Stewart, who, together with George Whitwell '15, is with the Philadelphia Electric Company. Stewart hopes to get up to the Alumni Day festivities, particularly in connection with the Electrical Engineering Department celebration.

Also, while in New York recently your Secretary had dinner with Walter Hauser and George Perley. Hauser, who is with the Motor Stoker Company, still insists that solid fuel is the only thing for every residence. Perley is watching with great interest the possible construction of new hospitals and schools in Greater New York in order that he may equip them with Holtzer Cabot telephone and fire-alarm systems.

At a recent meeting of Technology men in Newark to consider the possibility of organizing a Technology Club of Northern New Jersey, several '14 men were present. Because of the number of our Class working for the Telephone Company, a considerable number of them live in northern New Jersey.

Just to irritate Sousa Brooks again, record is made here of another patent issued to a classmate. Again the laurels go to E. C. Wente, and it will be required of Sousa Brooks to recite the title of the patent at the next '14 meeting. That you may practice up a bit, Sousa, here it is: "An Acoustic Device with a Plurality of Exponentially Tapered Horns, with a Common Throat and with Juxtaposed Outlets."

The February issue of the *Journal* of the Society of Automotive Engineers contained the following notice regarding Dinny Chatfield, Vice-President of that organization: "Charles Hugh Chatfield, after a year of graduate work at the M.I.T., entered aviation during the war years with the U. S. Naval Reserve Force at M.I.T. His government connections continued until 1921 when he joined the Wright Aeronautical Corporation at Paterson, N. J., becoming their chief airplane engineer in 1925. In 1926, Mr. Chatfield returned to M.I.T. as associate professor of aeronautics. He returned to the commercial side of the industry as aeronautical engineer for Pratt and Whitney Aircraft in 1929. At present he is chairman of the Technical Advisory Committee of the United Aircraft Corp., at East Hartford, Conn.

"He joined the Society in 1924 and was named to the Aircraft Activity Committee in 1931. In 1933 he became a member of the Wright Brothers Medal Board of Award and in 1934 vice-chairman of the Aircraft Activity Committee. In 1935 he will serve the Society as Vice-President representing the Aircraft-Engineering Activity." — Another who is active in association work is H. R. Aldrich, who is Assistant Secretary of the Geological Society of America.

Expecting you in Cambridge, June 3! — HAROLD B. RICHMOND, Secretary, 30 State Street, Cambridge, Mass. CHARLES P. FISKE, Assistant Secretary, 1775 Broadway, New York, N. Y.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1915

Our Twentieth Reunion will be held Friday, Saturday, and Sunday, May 31, June 1 and 2, at Ye Castle Inn, Cornfield Point, Saybrook, Conn. This is on the main motor highway, Route No. 1, between New York and Boston, and is easily reached. Already we have 70 men who plan to go. We should have 100 to make this the successful party that all the conditions warrant. I have already seen the place and would like to convey to you its beauty and the attractions of the surroundings. If you men could see the enthusiasm of the committee and share our feelings, you would all plan to come. We have decided not to have bus transportation, but there will be plenty of motor cars in Boston and New York to transport the men. Headquarters will be at Room 2-151 at the Institute, where everyone planning to leave from Boston will meet at 12 o'clock, noon, Friday, May 31. We must leave Boston no later than two o'clock and should be at Ye Castle Inn by five o'clock in time for the opening dinner.

There will be golf, baseball, tennis, swimming, speed-boat riding, sailing, all climaxed by a regular shore dinner Sunday noon, out of doors, with all the trimmings. The class photograph will be taken Sunday noon. All this for \$20, and, to make it easy for everyone to come, this \$20 may be paid on a deferred plan, with plenty of time to pay the total. This should induce and encourage everyone who does not want to pay \$20 at one time to come. A final notice and definite reply card will be sent to you early in April. Your committee and all the classmates with whom we have discussed this feel it is going to be our best reunion, and that we shall easily have 100 men in the party. Of course, after our own class reunion there is the All-Technology Alumni Day at the Institute on Monday, June 3. We shall leave Ye Castle Inn at five o'clock Sunday afternoon. No advance payments are required, and remember, no one need hesitate about accepting the deferred-payment plan. What we want most of all is to have as many men as possible attend the reunion and, as you know, the reunion is stag, of course.

1915 Continued

News from classmates continues to come in. Ted Spear is the mill manager at the Oxford Paper Company, Rumford, Maine. I know everyone who reads Ted's letter (following) will be glad to see him at the Reunion: "Not having thought of it recently, the realization that this year will make the Twentieth Reunion of our Class has made me notice how much water has gone under the bridge since we were all together. For the past 15 years I have been watching the water of the Androscoggin River go under the bridge back of the mill and I hope that I will be able to see it right along for some time to come."

"I have been very happy in my connections with this company for these several years and have become more or less rooted in the State of Maine. I hope this doesn't mean that I am in any particular rut, because there has been plenty by way of variety to keep me mentally and physically active during this time. The only complaint I have is that there are not more hours in the day."

"I have not been very fortunate in the last few years in seeing many of our classmates — a few of them get up this way now and then, and usually get in touch with me, but my own trips to the outside world are usually of short duration and do not permit much time to look up friends wherever I may be. One thing I have learned is that we can't have everything and, if we are busy, we usually find that we can get along without a number of things we would like to have if we had more leisure for them. I certainly hope that nothing interferes with my attending the Twentieth and you can rest assured that, as soon as the days are set, that part of the calendar will be blanked out and it will be something pretty important that will interfere with my being present."

Norman D. Doane is the district sales manager for the Permutit Company, 500 Queens Road, Charlotte, N. C. He is arranging his plans to come to the reunion. George Easter, at 2434 South Avenue, Niagara Falls, N. Y., gives us some good gossip about classmates: "No excitement at all to report. I am still at Carborundum as assistant director of research and am also a registered patent attorney. Barney Field has just been moved back here as head of the new laboratory of the Union Carbide and Carbon Company. He looks fat and happy. I see E. J. Casselman, occasionally, at Mellon Institute, Pittsburgh, where he is working on razor blades. He has a wife and two mighty nice kids. I hear that Gil Peakes is working on urea resins for Bakelite at Bloomfield, N. J. Otherwise, no '15 men have come my way lately. Ben Neal ran for mayor of Lockport, N. Y., in the fall of 1933, but, unfortunately, was defeated. He's probably not crooked enough yet for the job. I'm afraid I will not be at the big reunion, but best wishes all round."

I urge you most sincerely and most enthusiastically to come to the Reunion. — AZEL W. MACK, *Secretary*, 72 Charles Street, Malden, Mass.

*Plan to Attend
Technology's Homecoming Alumni Festival
On June 3*

1916

At the annual Boston alumni get-together dinner, the following class members were present: Melville H. Rood, Harold C. Fuller, Hyman B. Ullian, Harry L. Lavine, Howard A. Hands, Mark Aronson, Earl A. Edwards, H. P. Claussen. Preliminary plans were discussed for the 20th reunion next spring and it has been decided that it would be well to have a get-together some time in May, so that it will be possible to get a larger number present for the Annual Alumni Dinner which comes in June. We hope to have a committee appointed to get the ball rolling at an early date.

Bob E. Naumburg writes as follows: "After living in the vicinity of Boston for the past 14 years, I have moved back to New York City, where I have an engineering position which seems quite promising. I am now living at Parc Vendome, 333 West 56th Street, New York, N. Y."

I was more than pleased to get the following from Chuck Loomis: "I haven't any bright ideas as yet about the 20th reunion, except that I am strongly in favor of having one. From my own point of view, the later in June it is held the better it will suit me personally, but I will try to be on hand whenever and wherever you have it. I usually drive my family north some time around the middle of June and, of course, I would like to make only one trip. I suppose this suggestion doesn't fit in with the request of the administration to have reunions coincide with the Alumni Day at the Institute. With that in mind perhaps the best thing to do is to schedule it so that we can put in at least one day in Boston. That will probably mean moving the reunion closer to Boston and that in turn may mean a smaller attendance. About the only news I have is the death of Ross Campbell which occurred here some months ago. He was an official of the Buckeye Cotton Oil Company, paper mill in Memphis, which has developed a very large business making rayon pulp in the form of paper from cotton linters, is sold in quantities to such people as Dupont and Eastman."

"The five or six '16 hopefuls with the Bemis Bro. Bag Company carry on in their usual capacity: John Phillips at St. Louis, Dick Hunneman, Tom Little, and Santa Claussen at Boston, and myself at Memphis. I hear from all of them more or less frequently. . . ."

Start planning now for the 20th reunion. — H. B. SHEPARD, *Secretary*, 269 Highland Street, West Newton, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, Bemis Bro. Bag Company, Memphis, Tenn.

*Plan to Attend
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1917

As the Secretary was away when these notes became due, his office sent in the following correspondence which had

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been placed with him and which apparently had been held in anticipation of such an emergency.

From Dean Lobdell, we have the following: "Captain Schoonmaker, who is, I believe, near Birmingham, did me the honor of driving sundry miles to be present at a luncheon of the Southeastern M.I.T. Association there, and at the meeting I also received a letter of regret from Art Miller who is holding up the Wilson Dam."

"After spending four days at Baton Rouge, I went to Houston, and in the course of a day there I was interviewed by several members of the local press, who for some reason wished to ascertain my opinion of Huey Long. The newspaper publicity resulted in a call from Bob Gay, who is a member of the Mortgage Loan Department of the Second National Bank of Houston. For a banker, Bob looks prosperous and healthy. Also, he has no gray hairs, though he indicated that life was not without its minor upsets."

"There are some 35 Alumni supposed to live in Houston, but 48 turned out to the meeting, undoubtedly a tribute to the Egerton film which I had brought along. Seven drove from Port Arthur, I know, and the others similar distances. One man there — R. F. Munoz '09 — came as a delegate from the Technology Club of Monterrey. He told me that Eduardo Belden and Frank Sada — both of 1917 — were in Monterrey and would be glad to see anybody from Technology who could visit that city, which is on the direct new road to the capital of Mexico. It might also be mentioned that Kemerton Dean '16, Fritz Staub '15, and Guernsey Palmer '15 attended the Houston meeting."

"At Dallas, Ras Senter, who is chief Poo-Bah in the Southwest for the Emerald Petroleum Company, was, as might be expected, exceedingly active in doing the honors. Ras jumps around over the countryside and shoots wells in east Texas and in Louisiana and, despite the name of his organization, is looking for oil instead of green cheese. It is worth more than passing note that there is nothing green about Ras, not even in his office rug."

Word has also been received that a group of alumni residing in northern New Jersey has recently been granted recognition as the M.I.T. Club of Northern New Jersey with headquarters at Newark. Signing the application to the Alumni Council were F. Maguire, and W. I. McNeil, appearing as Chairman and Secretary, respectively, of the new club. This is quite in line with the activity of other members of the Class in other local clubs and we may expect an active and successful future for the new group. — RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

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1918

Elsewhere in the columns of this enlightened publication the name of that great and good friend — Allan Winter

1918 Continued

Rowe — has received many a well-earned tribute since his passing. You and I and half a dozen others could have been lost to this old world with less unfortunate and far-reaching results to the progress of humanity, or to the magnitude of happiness, or to the appreciation of what constitutes fundamental decency. In the catalogue of Dr. Rowe's multitudinous virtues too much emphasis cannot be placed on the pleasure afforded by his class notes to many who did not belong to '01. Surely the tireless, journalistic efforts of no other secretary were so widely read, not only for what was said but for the art with which it was said. It is, therefore, merely expressing a widespread conviction to make public the contents of a letter he received but a few days before his hospitalization: "As one who appreciates class notes which cease to be mere strings of words, but become a roll of drums that sweep from one side of the page to the other with phrases whose beauty and meticulous selection leave one almost inarticulate, let me thank you for the pleasure afforded by your dispatches. Were it not for the agonized paralysis in which some class notes leave me, I should burn my copies of *The Review* as a sort of literary criticism. But in this often dull assemblage there is always a gleam from the torchlit paragraphs of '01 which have all the tang of two bouncing friars swapping yarns over a mug of ale." I, for one, re-echo the above loudly and wish that those trudging, pedestrian paragraphs beginning, "Now, boys, if you fellows want any class notes, you'll simply have to write in," could be rewarded by a calamitous change in somebody's freshman English record. With the death of Allan Rowe these pages have lost many a pen-worthy paragraph. Now he belongs to the Ages.

A transition from the late genius, who was Secretary of 1901, to the banal affairs of 1918 being rather impossible, it is reasonable to pause for a moment for a polite bow to Orville B. Denison — sometime Alumni Secretary, acclaimed All-Technology cheer leader, and long since Secretary of the Class of 1911. On one of those March days whose temperature goes up and down like an emotional steam radiator, we were waiting in the lobby of the Hotel Bancroft, Worcester, for the serving of a banquet, to the conclusion of which we were supposed to contribute added relish in the form of a few remarks. Such cheerless contemplation is always a withering experience. Imagine, then, our irrepressible delight when Dennie bore down on our solitude with that strange, incommunicable gift of his for making everybody happy. Our colorless, multiplication-table mood vanished, nay, it gave way to positive ebullience when, following the toastmaster's introduction, Dennie topped it off with a rousing welcome in the form of two verses of "Take Me Back to Tech," accompanying himself on the piano, despite our unbelieving ears, with the music of the "Spanish Cavalier." If that sounds easy, just try it! Dennie is

now promotion manager for The Bancroft and we hereby bespeak your patronage.

Just to confound any voices wailing in the wilderness over our studied insults a paragraph or so above, we have, thank you, a communication: "I went to a meeting last night," sez Mal Eales, writing under date of February 29, "of the gang sponsoring the Tech Club of Northern New Jersey; a most enthusiastic crowd. . . . The house organ of Western Union Telegraph Company suddenly becoming aware of Pete Harrall's ecclesiastical interests, has the following item from the gossip column: 'Deacon Harrall reports sin well under control in Tenafly, N. J.' I feel that we'll have to take a hymn book along when next we break a sandwich with him — no disrespect intended toward George Ekwall, your old choir-singing Secretary, or anybody else. . . . Did you hear about our friend in Washington bequeathing her brains to the National Academy of Science and her teeth to the Elk's Club? Enough for now, in fact, too much."

And just to comfort any voices wailing in the wilderness over the studied insults, now unremembered paragraphs above, we have, alas, our troubles also. Hearing that Nat Krass had enchanted the New York fellowship with accounts of how he had pried open that enormous oyster called the U.S.S.R. on his European trip (Nat speaks Russian, you know) we begged him for 19 agate lines to enliven this column. Nat replied: "Yours of the 18th received and contents noted . . . but I am the worst letter writer in the world and I can't seem to think consecutively unless I've got somebody to ask me a lot of questions. The next time you are down in New York, if you will have dinner with me, I will be very glad to answer a lot of questions and, then, perhaps, you can get some dope regarding my trip to Europe and Russia."

That was Monday. The following Thursday night we were standing expectant, on Manhattan Island. Friday Nat was in New Jersey. Saturday Nat went to Rochester. Sunday Nat was not yet home. Monday we had a class . . . and, oh yes, had finished our other New York business. So we wrote Nat one of those restrained, conciliatory, and ineffably touching letters, beginning: "You're a big, bad boy, and that's that! January 21 you send me an invitation to a talk fest. January 24 I set out for Gotham, get stuck in a snow drift, and, by George, you're gone the 25th, 26th, and 27th. The 28th I have to return. Am I disappointed! (Hope you are also.) — Now I ask you if Mrs. Krass (she of the melodious telephone voice) can't be persuaded by a pretty please to write me, over your signature, a paragraph or two about: the preservation of Lenin's body; trouble in getting food; railroad schedules; the percentage of Russians who are communists; the Gay-Pay-OO; how to be happy though a capitalist." Since then, a deep, impenetrable, but harsh silence has filled the chill and cheerless air. — F. ALEXANDER MAGOUN, Secretary, Room 4-136, M.I.T.,

Cambridge, Mass. GRETCHEN A. PALMER, Assistant Secretary, The Thomas School, The Wilson Road, Rowayton, Conn.

*Plan to Attend
Technology's Homecoming Alumni Festival
On June 3*

1920

I have a very welcome letter from George DesMarais, in which he reports the forming of a new group of Technology Alumni for the territory of Northern New Jersey, among which were a number of our classmates, including Charles Carleton, Ralph Larsen, Frank Bradley, Carl Ellis, Lawrence Allen, Arthur Radasch, Harry Kahn, Al Glassett, and K. S. M. Davidson. Al Glassett, as President of the Tech group of New York, was one of the speakers at the meeting which was held at the Downtown Club in Newark. George DesMarais is with the Law Offices of Cooper, Kerr, and Dunham, Woolworth Building, New York City.

We hope to see all of this group at the reunion in Norwich, Conn., May 31. Judging by all reports, this is going to be by far the best reunion we have held and any classmate who doesn't make a strenuous effort to be on deck is going to be kicking himself for the next five years.

It is my sad duty to report the death of Townsend Hingston on February 23. Townsend was the son of William E. Hingston, the prominent handwriting expert with whom he had been associated in business for the past two years. He was unmarried and was living with his parents in Wollaston, Mass. I have received word that Harold Bibber is now chief consulting engineer for the City of Columbus, Ohio, and is in charge of the construction of a million-dollar municipal light plant there. Carleton Alexander has left Fairbanks, Alaska, and is now located at Plasterco, Va. Bradford Clark's new address is 3820 Waldo Avenue, Riverdale, N. Y. Raymond Coward has been located at 442 Main Street, Red Bluff, Calif. Richard Gibson is in Knoxville, Tenn., address 902 Hamilton Bank Building. Bill Hedlund is now living at 74 Wildwood Road, New Rochelle. Charles Keener is professor of electrical engineering at the University of Illinois. Ed McCarthy is with the Gamewell Company in Newton Upper Falls. Joe Mahan left Texas and is in Toledo, Ohio, address 2550 Orchard Road. Bob Patterson, who is with the John Hancock Life Insurance Company, is living at 5 Chestnut Street, Boston. Bob Tobin is with the Tilo Roofing Company, Inc., Stratford, Conn. Josh Welch has left Erie, Pa., and may be reached at Jamaica, N. Y., P. O. Box 47. — HAROLD BUGBEE, Secretary, 7 Dartmouth Street, Winchester, Mass.

*Plan to Attend
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1921

We wish to extend greetings to the 1921 members of our augmented audience this month and to welcome them to our

1921 Continued

own little series of fireside chats. Letters and notes from all of you will be much appreciated indications that our efforts merit your approval. May all of you henceforth be in regular attendance at our monthly gathering in these columns.

The Class was well represented among the 325 diners at the initial meeting of the M.I.T. Club of Northern New Jersey. President Compton's reference to the lusty vocalizing was evidently predicated on the welkin-ringing for which this group was responsible. Even Bill Orchard had to retire to his corner when the crescendos emanating from the 1921 table far outshadowed his abdominal Steinway. Among those present were: Maxwell K. Buckett, Clyde L. Chatham, Ormond W. Clark, Carole A. Clarke, Roger H. Damon '22, Willard A. Emery, Sumner Hayward, Paul B. Hunter, Ralph C. Lockwood '23, Egbert W. Olcott, Harold F. Stose, John H. Teeter '22, Arthur A. Turner, Frederick E. Kowarsky, Harold L. Levin, Joseph Wenick, and Ralph S. Wetsten. Harold Stose and Eggs Olcott have been active in program and membership work and your Assistant Secretary has been a member of the Steering, or, as it has been called, the Steerage Committee.

Chick Kurth has sent us a folder which urged the good townfolk of Arlington to cast their ballots for Harold M. Estabrook for Selectman. There appears the picture of a handsome young man (culled, we suspect, from *Technique*), a glowing testimonial, and numerous personal items. We learn that Harold, for 14 years with Patterson, Wyld and Windeler, has been active in town affairs for many years in connection with school and finance committees and the Town Meeting. Chick tersely comments at the bottom: "Duly elected March 4."

On a recent visit to Schenectady, we had a pleasant talk with Bruce M. Mills, who disports himself in the industrial apparatus division of the General Electric Company. In Washington we tried to locate Thomas D. Dutton who admits being division engineer for the American Telephone and Telegraph Company, but it was a rainy day and Tom was out marshaling the disciples through the Pupin coils.

From the Topeka *Capital* for February 14, we learn that, at the election of officers during the convention of the Kansas Engineering Society, Professor Dugald C. Jackson, Jr., was named President of the organization. Dugald is head of the department of electrical engineering in the School of Engineering and Architecture of the University of Kansas at Lawrence.

In the spring a Tech man's fancy lightly turns to thoughts of . . . what? It ought to be thoughts of writing to his secretaries but we'll gamble the July issue of *The Review* against a ticket to Alumni Day that it isn't. Since, in radio parlance, it is your applause which makes this column possible, go buy some of Jim Farley's steel engravings (perforated or imperforated) and affix them to letters to your secretaries. — RAYMOND

A. ST. LAURENT, *Secretary*, Rogers Paper Manufacturing Company, South Manchester, Conn. CAROLE A. CLARKE, *Assistant Secretary*, 10 University Avenue, Chatham, N. J.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1923

But for Pete Pennypacker, there might be no notes this month. He has, however, crashed through with a big news item which relates to our President, Bob Shaw. Bob is receiving congratulations on becoming the parent of a bouncing boy, Bob, Junior. Pete reports that Mrs. Shaw and the baby are doing nicely. The rest of Pete's story relates to the activities of the New York Group: "The New York Club of '23 held a dinner dance on Thursday, February 21, at the Blue Hills Plantation in Dunnellen, N. J. The following were present, each accompanied by his respective wife: Walt Marder, Rod Goetichius, Bill Tayler, Miles Pennypacker, F. P. Squibb, Tom Gill '22, Charles Carleton '20, Ed Thimme, and Pete Pennypacker. Squibb was in charge of the affair. The orchestra and dance floor were excellent so we had a full evening. Bill Tayler told some stories and gave us an idea of how to find our way around Russia. Other speakers were Walt Marder, Squibb, Ed Thimme, and Pete Pennypacker. A telegram was received from Lem Tremaine, expressing his regret at not being able to attend. He had been undergoing an operation recently but is now doing nicely."

The New York *Sun* reports that at the recent dog show in New York the winner was a poodle, property of the wife of Sherman Hoyt, XV. — Gus E. Danielson, III, of the Sullivan Machinery Company, died suddenly in a sanitarium in Texas on December 9, 1934. He had represented his company in the South, and later on he was in Peru for a number of years. His most recent assignment was in Mexico City in charge of the sales branch of the Sullivan Machinery Company for that country. He had been in the hospital with high blood pressure, but had been dismissed as apparently all right. However, a relapse occurred which was too sudden for him to stand. He was buried from his home in Boulder, Colo., on December 13. He leaves a wife and two daughters. — HORATIO L. BOND, *Secretary*, 195 Elm Street, Braintree, Mass. JAMES A. PENNYPACKER, *Assistant Secretary*, Room 661, 11 Broadway, New York, N. Y.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1925

COURSES III AND XII

I. M. Symonds seems still to have a preference for a warmer and less variable climate than we enjoy in New England. Just when we thought he was located at the Institute for some time, a job showed up in Mexico and within a week he was

on the way. He left Cambridge on March 1, drove to Rogers, Ark., and there left his family temporarily while he continued on to clear up certain matters at Monterey before returning for them. Sy is taking up the superintendency of a 300-ton mill of the American Metals Company and should be addressed care of Cia Minera de Penoles, Avalos, Zacatecas, Mexico. The mill is to treat a rich lead-zinc-silver ore by all flotation methods and will be ready to start production in June or July of this year. The position gives Sy a fine opportunity to show how good a mill man he is and we wish him the best of luck. Word has just come through that Parke A. Hodges '27, known to many of our Class, has just returned to Mexico with the Cia Minera Kildun y Annexas, S. A., and is located at Matehuala, San Luis Potosi, only about 80 miles from Sy's new location.

Count Blonsky and his charming wife spent three days at Christmas time with me and my family and he had many stories to tell of his experiences during his five years abroad. He is located temporarily at Westport, Conn., carrying on various types of research with the Dorr Company. It is impossible for me to recount his experiences of the past few years during which time he touched nearly every country in Europe and a few in Asia and Africa. To appreciate them, you must hear them direct from the Count. — F. LEROY FOSTER, *Secretary*, Room 6-202, M.I.T., Cambridge, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival on June 3

1926

Joe Levis was the subject of an article in the magazine section of the Boston *Transcript* of March 24. I quote: "The engaging young man who holds the Amateur Fencers League palm as number one foilsmen is a product, like Lieutenant Calnan '23, of English High (Boston), and was brought up in the North End. 'I guess I didn't say,' he explains, 'that my ancestry is Italian.' His father was once national champion of Italy, and in the early years of the century was well known as a participant in fencing matches in Boston. He's in his early 60's now, but he still takes a hand at the foils for recreation. His business now, which his son shares with him, is contracting. The family lives in Dorchester, where the business is also. He was asked about the cry he gives when he fences. 'It's something Italian,' an opponent had explained, 'he just gets so excited he can't keep from yelling.'"

"Another great tradition among Boston fencers is Lieutenant George C. Calnan of Watertown, who was killed in the Akron crash in 1933. He was a dear personal friend of Levis; as a graduate student at Tech, he had started the young man fencing in his freshman year. Calnan made a name for himself in fencing at Annapolis, where he was graduated in 1919, and was on the Olympic teams of '20, '24, '28, and '32, being captain the

1926 Continued

last year and chosen as this country's representative to take the oath of amateurism at the opening ceremonies.

"George kept working with me unselfishly for years," says Levis, "and kept on after I had finished at Tech and was working in New York. The night in 1929 when I won the national title he had held for three consecutive years, he was the first to congratulate me, and I know his good wishes were the sincerest I've ever received from anyone."

All of us watch with enthusiasm and pleasure Joe's continued accomplishments as our country's outstanding fencer. He has our best wishes for the national championships which come off about the time this appears in print.

Mr. and Mrs. Albert L. Atkinson of Bridgeport, Conn., have announced the engagement of their daughter, Miss Millicent Elinor Atkinson, to Ralph E. Smith of Winchester, Mass. The wedding will take place in June. Miss Atkinson was graduated from Smith in 1931; Ralph is with the Aluminum Company of America.

I have just received information that Lawrence S. Randall was married on September 1, last, to Miss Lois E. Kesler, in Akron, Ohio. Randall, who was in Course II, has been with the Goodyear Tire and Rubber Company, working on tire design since his graduation. Mrs. Randall is a native of Akron and a graduate of Miami College.

Samuel W. Brooks is with the General Motors Truck Company in New York. — Horace M. Bush is with W. A. Nash and Company, Inc., Boston. — Richard L. Cory is stationed at the Philadelphia Navy Yard. — Dr. George D. Cummings is in the Bureau of Laboratories, Michigan Department of Health, Lansing. — To our professorial club, we add the name of John A. Gibson, who teaches in the Department of Chemistry, West Virginia University. — Edward F. Kerns may be found at the R.C.A. Victor Company in New York, and Allan W. Lundstrum at the Electric Bond and Share Company. — To our foreign legion we add the name of Herbert S. Pink, whose address is "Braganza," Netheroyd Hill Road, Huddersfield, England. — J. RHYNE KILLIAN, JR., Secretary, Room 11-203, M.I.T., Cambridge, Mass.

Plan to Attend

Technology's Homecoming Alumni Festival On June 3

1928

Everett Smith Cofran, alias Curley, the erstwhile art editor of *Voo Doo*, has finally entered the marital state at the Harvard University Chapel. The chapel was designed by him while he was with Coolidge, Shepley, Bulfinch and Abbott soon after completing his graduate work in 1930. While with this company he also helped in the design of the Biology Building at Harvard and pleased the biologists by forgetting the traditional colonial windows, running the fenestration from floor to ceiling, and by putting the greenhouse up where it could get some sun,

on the roof. Rumors of a building depression came his way, so off he sailed for Bermuda, where he had been invited to design the Royal Bermuda Tennis Stadium and Clubhouse, and liking the climate so much, and meeting the "girl of his dreams" he remained until November, 1934. During that period he designed and architected about every structure built there, including the Royal Bermuda Yacht Club, and a large estate for Vincent Astor, of which the house itself was 425 feet long. Since leaving the fair islands, he has been continuing his work and study under the noted Finnish architect and city planner, Eliel Saarinen, at Cranbrook, Mich. Cofran has developed a comprehensive city plan and civic center for Pontiac and is now designing business centers for private interests.

Curley's wife, the former Miss Elfreda Davies-Thomas, a native Bermudian, used to be with the British Consulate Service in New York. They were married on January 26, and are now making their home at 14 Sunset Terrace, Bloomfield Hills, Mich.

Other pages of this issue will in all probability be devoted to a complete description of the first Alumni Day which is now to be held every year. This year the classes whose numerals end with 5's or 0's will hold their five-year reunions so that their classes will be at the Institute on June 3 for Alumni Day. Since our Tenth Reunion is still three years off, there will be no special reunion plan for our Class. However, many '28 men have signified their intention of attending Alumni Day on June 3 and we want to encourage everyone who can to come. We shall have a table (or tables) at Symphony Hall; let's display our usual strength of numbers and fervor of enthusiasm. — GEORGE I. CHATFIELD, General Secretary, 5 Alben Street, Winchester, Mass.

Plan to Attend

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1929

Another spring has rolled around and we are on the second lap of our journey toward our ten-year reunion. Things do change in a few years' time. — The Alumni Association reports changes in addresses to me and there the story ends unless you crash through with some further information about yourselves. It is very seldom that you do, but when and if you do, it is appreciated mightily. We move around from place to place with only an address record to show the change, but behind the scenes is an interesting story. Was it a change in jobs or a change in employers?

Let's start right now to establish ourselves with the rest of the Class. Where are you all, for whom are you working, and in what capacity? I'll start the ball rolling by announcing that I'm still working for the Goodyear Tire and Rubber Company in the development department, but in a different capacity. Whereas the last five-and-a-half years have been

on development and design work about the factory in Akron, I am now working between Detroit and Akron as one of three who contact with the automobile manufacturers on tire-engineering problems. It's a change for the better, but it takes me away from home a great deal. However, I get to spend my week-ends in Akron.

Now for news of the rest of the Class: Arthur Marsh, XV₂, wrote a very interesting letter about himself after keeping out of the news for some time. It has so much of interest to all of you that I am giving it here in its entirety. "In keeping with New Year's resolutions and such, I have finally decided to write a letter I have long intended to write. I always turn the pages of *The Review* to '29 news and recently have observed a somewhat renewed interest in class news, so here's my little bit.

"If my memory serves me correctly, my last letter was written in early 1930 out in Cincinnati, where I was particularly disgusted with working in general. Since then my jobs, while all within the Carrier Engineering Corporation, have been many and varied. Following a basic theoretical air-conditioning course, I passed through several months in research, estimating, engineering, and back, in 1931, to a two-year period in the research division. While there I had most of the test work in connection with the steam-ejector system of railway-car air conditioning. This system has proved its advantages over the mechanical systems now on the market, and this year of 1934 has seen the installation of 1,000 car units of this type.

"In June, 1933, I was assigned the position of assistant manager of the product design department, where I have remained since that time. I find the work interesting and varied, if somewhat nerve-racking. Our business now seems to be looking definitely upwards and we are looking forward to the best year since 1929. We sincerely hope this will prove to be the case, as the past five years have been trying to us, as to general industry.

"After a prolonged engagement of over two years, I finally entered the lists of the married and am quite peacefully settled out in the sticks of New Jersey in the Mountainside borough of Westfield. I have seen quite a few Tech men at certain occasions. While looking over one of our jobs at the Aluminum Company plant in Edgewater, I bumped into Steve Dilworth, and, particularly as we were rather close friends at the Institute and had not heard from each other in the intervening years, we were quite surprised. Steve has been with Aluminum Company since graduation and is, I understand, employed in the capacity of 'efficiency man.'

"Going to Boston on the boat last Xmas, I had quite a visit with Al Eigenbrot and wife. — Cub Clark lives in Flushing and we have seen each other occasionally but not so often as I should like. . . . Our various jobs keep us pretty well tied up and make it somewhat difficult to get together. At an A.S.M.E.

1929 Continued

meeting in New York a few weeks ago I met Guinan '30, who used to live in Arlington, Mass., my home town.

"Beans Nivling was around our plant for some time superintending the installation of some statistical machines. I understand he left his job with International Business Machine Company to go with a warehouse company in Boston, sometime in August. — We had one good '29 meeting in New York last winter and I, for one, am in favor of more. Arthur Pforzheimer ably reported the minutes of that meeting in a previous Review.

"My best regards to you, and if you ever get to New York, I wish you would make an effort to reach me at Carrier Engineering Corporation, Newark, N. J., and we'll have a little reunion."

The following is a list of our classmates to whom we extend our congratulations and best wishes. Until I replace the records of the Class that were destroyed by fire, you will have to excuse me if I omit the designation of the course following the name. Late in November the engagement of Putnam Cilley to Elizabeth Friend of Winchester, Mass., was announced. In December John Middleton became engaged to Frances Janet Hamilton of Palmer, Mass., and Andrew Ogden, IV, to Anne Townsend Van Gilder of Morristown, N. J. Early in January the engagement of Alton Knight to Mary Roberts Ackerman was announced. Such news of engagements and marriages seldom finds its way into the class notes unless a Boston or New York newspaper reports the event and the Alumni newspaper clipping services catch the announcement. It would be so easy to include either your Course Secretary or Class Secretary on your mailing list when announcements are sent out. Would it not be a good way to insure its being reported in these columns?

I hope that you all enjoy your summer vacations and wish to say that if any of you are traveling in the vicinity of Akron, I'd enjoy your contacting with me. — EARL W. GLEN, *General Secretary*, 1302 Delia Avenue, Akron, Ohio.

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1930

COURSE X

News is scarce, but I'll do the best that I can with what I have, in the hope that some Course X men may be inspired, by this small offering, to break the years of silence and tell us of their adventures since graduation. Ed Nolan, who is our representative at the Institute, responded nobly to an appeal for news with the following tidbits: "Savina is still with the E. L. Patch Company in Stoneham as research engineer and chemist. His major work is in the development of new pharmaceutical products, and he is directing the work of a number of people in the laboratory. . . A new Ford . . . places Savina in the filthy capitalist class, as far as I am concerned. — Youngson came east from Menasha, Wis., for a

two weeks' vacation this winter. Ronnie is assistant to the chief chemist of a paper mill, and spends most of his time on plant technical problems. He has become an outdoors enthusiast, and is the proud possessor of gadgets enough to make all good hunters, fishermen, horsemen, and winter sportsmen turn green with envy. — Elmer Harmon was doing research at M.I.T. for the Division of Industrial Cooperation and Research, but has recently changed over to a position with the Internal Revenue Department of the Government." Ed continues: "I'm on a 16-hour schedule trying to push a doctor's thesis along and learn some chemistry at the same time." Sounds as though he were making the most of his graduate work at Tech!

Chuck Ladd is wrestling with the intricacies of patent law in the office of Blair, Curtis, and Dunne, at 60 East 42nd Street, New York City. The Ladds, with "Chuckles," now two-and-a-half years old, celebrate their fifth wedding anniversary this year. They are living in the country, in Darien, Conn. Chuck writes that Hermann Botzow, who was married last summer, is now working for Compressed Gases, Inc., and is located in Cleveland.

Paul Hahn, who is doing research work at the Medical School of the University of Rochester, has gained so much weight and disguised himself so effectively with a mustache that I almost failed to recognize him a few months ago. — HOWARD S. GARDNER, JR., *Secretary*, 380 Ridgeway Avenue, Rochester, N. Y.

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1932

As will be reported elsewhere, the M.I.T. Club of Northern New Jersey got off to a flying start March 15. There were quite a few at the '32 table. Dick Stewart still lives in Montclair. He is married and teaches in Newark. Stude Fleming was there and claims he has a lot of news for Jim Harper, Secretary of XVII. Keskulla was there with an extremely red face. He accounted for it by his work with magnesium in a plant at Fanwood, N. J. He seemed to know all about his fellow members of Course III, thanks to the excellent job being done by Henry Chapin. When I started out, I thought I remembered many more fellows who had been there. Unfortunately I do not.

In glancing over the address changes I noted several of interest: Philip M. Allen, IX-B, with Mathushek Piano Manufacturing Company, New York City; Ben Archambault, XV, with Standard Oil Company, Chicago; Ed Beck, II, at Sealed Power Corporation, Los Angeles; George Freeman, I, with U. S. Geological Survey, Edwards, Miss. Bernard is now Dr. Gould, VII, and is at the Institute. Ad Hall, I, is in Charleston, S. C., for the U. S. Coast and Geodetic Survey. Bob Ingram, X, is in the General Electric Air Conditioning Division of Albert Aherns Company in Oklahoma City. Bill Kirk-

patrick, X (Course Secretary, in case you had forgot) is evidently coming up in the world, for his address is The Lafayette, Portland, Maine. Sam Lambert, III, is with Shell Petroleum at Tulsa. Charles McCormack, X, has moved from Winchester, Mass., to Winchester, Va. Ed Philbrick, XV, is at the Gorham Manufacturing Company, Providence.

Dub Rash, X, now has III instead of Jr. after his name, and is working with the gargle people in St. Louis; yes, Lambert Pharmacal. Fred Reese, XV, is with Hookless Fastener Company at Meadville, Pa. Jim Robson, II, is with Firestone at Akron. John Ruggles, II, has for an address Inland Manufacturing Company, Dayton, Ohio. Sounds good, John, how about a few details? Bill Schoolfield, XVI, is at West Hartford, 31 South Highland Street. Lieutenant John Strickler, XVI, is in Detroit.

The gang is certainly far flung and it is only by the help of all that we may occasionally hear from you. Dick Rafter wrote a letter to me showing a decided interest as to what Course V has been doing. Will you in V please cooperate with him as your new Course Secretary. His address is 78 Central Street, Hudson, Mass.

Rolf Eliassen has a few words about Course I: "It looks as though the Course is finally beginning to pay dividends. Harold G. Conger was married to Alice Elizabeth Wolfe, at Winchester, Mass., February 21; and Stanley L. Johnson to Jane Harvey at Hastings-on-Hudson, N. Y., March 9. That's swell news, fellows!" — C. M. CHASE, JR., *General Secretary*, 539 Central Avenue, Bound Brook, N. J. CARROLL L. WILSON, *Assistant Secretary*, Room 3-210, M.I.T., Cambridge, Mass.

Plan to Attend

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1933

I understand that this month's edition of this exchange is to reach a larger field than usual. If you are a newcomer among our readers, may I urge you to join us and drop me a line occasionally telling me what happened to you and other classmates you may contact. We are all interested in you as a fellow Tech man and ask your aid in keeping this column going.

My first source of information this month comes from the society pages of an assortment of newspapers — some of these are rather old but have reached me only recently. The engagement of Miss Helen Louise Stevenson to Edward R. Atkinson has been announced. Ed has been continuing his studies at the Institute. Miss Ruth Ross and Ralph Rosenbaum have announced their engagement. Miss Rhoda Young and William T. Chase, Jr., have announced their intentions. And one which yours truly has been anxiously waiting to include in these notes is that of Miss Virginia Cannon to Joseph Carbonell. We also have two weddings to announce: that of Harold

1933 Continued

G. Conger in February (Conger is a civil engineer employed in a government position in Washington, where the couple will reside); that of Miss Rosalind Harris to John Ivers Lynch on March 5. I am sure the Class joins me in extending to you best wishes for health and happiness.

I was glad to hear from Wen Allen this spring, who is at present in the Radio Engineering Laboratory of the American Bosch Corporation as coil designer. — I also have a letter from Earle McLeod which speaks for itself: "I am still working for the Pacific Mills in Lawrence, Mass. My work has been interesting, with experience with synthetic resins, paints, and varnishes, and varied analytical jobs. The job has given me a good deal of experience. I have been going to night school at M.I.T. doing some work in my line." — GEORGE HENNING, JR., General Secretary, 163 Barbey Street, Brooklyn, N. Y. Robert M. Kimball, Assistant Secretary, Room 3-106, M.I.T., Cambridge, Mass.

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COURSE VIII

Our noble Secretary handed me the above collection, with instructions to add my Course VIII notes to it and send the whole along to The Review. Modestly, George didn't say anything about himself, thus leaving the door wide open for me to put in a few kind words. It seems that a couple of weeks ago (early in March) the doctors decided that George had one too many parts and that he would get along a lot better without his appendix. No sooner said than done, and the offending member was out as neat as you please. Nothing could give a better excuse for a trip to Florida, and so George, his mother, and his brother, Teddy, left by boat on the 19th for the Sunny Shores, the Coral Beaches, or whatever else the copy writers call them. They took their car along, expecting to drive back after about three weeks. It sounds like a great trip.

A couple of letters came in after George left, one from Clare Horwood '34. Clare reports that he is with the Canadian Government as research geologist in the Bureau of Economic Geology, working on the gold resources of Canada, a position he has held since December 1, 1934. The previous summer sounds interesting, as Clare was out at Great Bear Lake doing consulting work. His present address is 350 Victoria Museum, Ottawa, Canada.

From St. Louis comes a letter from John Mesker. John reports that his business address is 424 South Seventh Street, St. Louis, Mo. He passes on some information, too, about other fellows in the kind of letter a class Secretary likes to get. "It might interest you to know that Jimmy Mills is still helping the Granite City Steel Company keep out of the red, and that Fred Wehmiller is doing a fine job with the Barry-Wehmiller Machinery

Company, manufacturers of beer-bottling equipment. If you know Fred, you, of course, realize that this type of business puts him in his element." I gather that Jimmy is living in Granite City, Ill.; Fred in St. Louis.

As for Course VIII, Bob Tripp hasn't been heard of in these columns for a long time, but I had lunch with him the other day and got caught up to date. He is with the United Research Corporation, a Warner Brothers subsidiary, over in Long Island City. The big news is that on February 17, 1934, he and Miss Dorothy Ford of New York and California were married. They are living at the Park Lane Apartments 32-25 93rd Street, Jackson Heights, N. Y., HAvmeyer 9-5248, for the benefit of any of you fellows who are or will be near enough to call up.

Over the Washington's Birthday weekend Clewell, Duntley, Sterner, and Walters came down to the American Physical Society Meetings at Columbia. I saw quite a bit of them and have lots to pass on. Clewell has only a thesis between himself and a Ph.D. The shop has just turned out a couple of tons, more or less, of copper and brass with which Dayt hopes to capture the trace of the elusive electron, or was it x-ray? Physicists must make pretty good newspaper men because the Boston *Globe* is still availing itself of his talents. Earlier in the year, Dayt was in charge of the M.I.T. exhibit at the A.A.A.S. meeting in Pittsburgh. Duntley, after a year at California Technology is back at the Institute working for his doctorate under Professor Hardy. The California climate must have been good for him, as he returned to us richer by an M.S. degree.

John Sterner is still around the Institute, as is Fischer, the latter doing some nice work in theoretical physics. Stan Walters is with Tobe Deutschmann in Canton, Mass., helping them find out about electrolytic condensers. He gets up to Boston for week-ends fairly regularly, and finds the studio couches in the Graduate House pretty comfortable.

Traveling further afield, Ivan Getting should be finishing his second year at Oxford as this column reaches publication. Your Secretary is still with Calibron Products, Inc., West Orange, N. J. I have been living in New York all winter, getting to and from work by means of the subway, ferry, suburban train, and bus. I have also been able to take a few courses at Columbia. — WILBER B. HUSTON, Secretary, 61 Gramercy Park, New York, N. Y.

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COURSE VI-A

Frank Hall writes in a very welcome letter that he has been working since the first of the year as radio technician for an inventor in Mount Dora, Fla., working on some problems having to do with the betterment of radio reception. He has a nice little laboratory all his own, and

although he remarked about the loneliness of the work, he praised his employer and said they got along well together. According to him, Tech men seem to be "hidden under the proverbial bushel basket" in that part of Florida.

Frank goes on to say: "In ordering radio parts, or anything else for that matter, it is actually quicker to send to New York City than to Atlanta. The idea seems to be that you have waited so long for the parts, a week or two more will make little difference. Even in these depressed times, some of the stores seem in no hurry to help customers." Some of you Course XV business sharks might get a tip from the above quotation. — Harris Thompson is still with the General Electric Company, but was transferred to Pittsfield the first part of March, where he started work on the midnight shift.

I paid a hasty visit to Boston one week-end at the end of February. Saw Professor Timbie and C. E. Tucker, but missed seeing Professor Wildes. Miss Hunt told me that he couldn't get his car started that morning! I have just been transferred to Ithaca, N. Y., the home of Cornell University. Am going to do telephone installation work for a while. — JOHN F. LONGLEY, Secretary, General Delivery, Ithaca, N. Y.

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COURSE XVII

Santa Claus Farley was good this month: two whole letters, one from Ed Rowell and one from Don Neil. Sometimes I wonder whether Professor Tucker got our class "all writ out" during those four years. But hence and away to more informing news.

Don is still with the Constructing Quartermaster's office in New York, and at this writing (middle of March) is marking time with only one job still under way and that about 90% completed. He says the jobs just about run themselves at that stage, but just let him be looking for that missing butt or trying to get a terrazzo grinder back to do an hour's work so the building will be ready for final inspection! Brother, it's no time for the contractor to let them run along, just ask me!

Neil is down on the Battery and writing from his office. I suppose it was from there, as the letter was on QMC stationery. He reminds me that just a year ago we had lunch together and went off to mix with a St. Patrick's Day parade. The years seem to be going too fast now. It will have been two since we left Symphony Hall, full-fledged B.S.'s. Hardly seems possible, does it?

Ed dropped in to see Don for a few minutes while in the city making contacts. I suppose the proper amount of bull flowed, if age has had its proper respect for drawing-room practices. — Rowell was looking around for something to do that would bring in a little cash at this reporting. The inventory of sewers, manholes, and conduits closed a

1933 Continued

few weeks ago, and the job, which was temporary from the start, came to an end.

The Tech movie got to "Phillie" sometime during the spring, and Ed took it in. He voiced the complaint that while it seemed admirably suited to the purpose of attracting cash customers to the Institute, it didn't mention a word about Course XVII. Well, we'll just get up a movie of our own some day and inveigle some of those freshmen into our course. (Bet Professor Tucker thinks this is rank heresy; only those who want our course are wanted, isn't that the story?)

And down Philadelphia way there was a minstrel show directed by our own Rowell, no more, no less, and while he sounded enthusiastic, Ed said it was a real job. One of the end men quit cold, and a quartet was the dearest thing to Ed's heart along about the first of March.

I seem to figure quite regularly in this section, but then I don't have to write letters to myself. Was in N. Y. a while back and called Don. He says the marriage is to come the first part of June, and that for all the things they have to do, the time begins to look pretty short. . . and I guess it is. By the time you get this the big date should be chosen. We hope you can stand up under the strain, Don, and Ed says you by gosh better send him an invitation.

PWA keeps our office busy, but we are getting a private job under way now and then. I'm just quantity surveying away down here. Let's hear from a few of you other fellows occasionally. Can you write? — BEAUMERT WHITTON, Secretary, care of Southeastern Construction Company, Box 1491, Charlotte, N. C.

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COURSE X

Well, gentlemen, it's been a long time since any news of good old Course X has found its way into the notes and, although the picture I offer you is far from complete, it is, at least, a step in the right direction. This presentation is dedicated to our brave "Colonel," Charles Edward Cashman, who, in the week of March 17, while working with the duPont Viscoloid Company at Leominster, Mass., met with an extremely unfortunate accident which resulted in the loss of three fingers of his left hand. You have our sincere sympathy, Charlie.

In completing the story of the trio, I offer Garb Garbarino's story next. To date, Garb has had an interesting career, dividing his time with complete unselfishness among many varied industries. The sequence I cannot vouch for, but let's look at the record: first, the Marius Hollander Distillery in Brooklyn, N. Y.; then the General Chemical Company at Edgewater, N. J.; following this, a short stay with the N.B.C. studio in New York; and now a statistician (?) with the Crowell Publishing Company in New York. As for the third member of the trio, Count Bertozzi, rumor has it

that the Count is revamping his dad's ice-cream business down in Pawtucket, R. I.

For the sake of brevity, let's consider the duPont family, all in one group. On general principles, we would give Pete the lead off, but when he comes through with a Pierre S. duPont, IV, there is no side-tracking the guy — congratulations, Pete! Pete himself is struggling along as a research chemist at the experimental station in Wilmington, working in the field of hydrogenation. — Fran Vaughan is also located at the experimental station there, but his work is conducted under the auspices of the duPont Ammonia Company, details unknown. The duPont Viscoloid Company has the largest number of representatives: Hart Cirkner and Dave Treadwell at Arlington, N. J., and Charlie Cashman at Leominster, Mass. Lobby Lobdell has cast some aspersions on the character of Dave by describing his night life, but for the sake of Dave's reputation, I'll be mum on that point. The Secretary is the last of the duPonters, working with the Grasselli Chemical Company here in the Boston sales office and aspiring to a future in the industrial marketing field.

The enemy, the Allied Chemical and Dye, now has, to the best of my knowledge, one remaining representative of X, '33 — Gus Kidde. Gus is now located at the Marcus Hook plant of the General Chemical Company as a control and experimental engineer in the sulphuric acid department. — Bill Rand has acquired new talents with the passing years and now ranks as an "efficiency expert" on departmental organization in the Dennison Manufacturing Company, Framingham, Mass. And speaking of new talents, Bill was headed straight for the altar the last time I met him; what's the happy news, Bill? As for Bob Smith, erstwhile crack drummer of the Tech-tonians, I hear that he, too, has taken unto himself a wife. Bob is now located with a film-manufacturing concern, the name of which slips my mind for the moment. — Warren K. Lewis, Jr., and A. S. Parker are both aspirants for the Ph.D. degree at M.I.T. Here's luck to you! Larry Kingsland, the traitor, now seeks an M.D. degree and at present is combining teaching and studying on his way to his goal. Bob Grady, when last heard from, was operating the family's hotel in Marlboro, Mass. Don't forget to make this a stopping place, lads, when you're passing through.

Finally, the oil magnates from our group should be given a line or two. First, dapper little Mort Williams, one of the first of the lads to land a job, is still with the Sun Oil Company at Marcus Hook, Pa. And then Lobby, the pride of Melrose, now located with the Standard Oil Company of New Jersey. If any of you fellows are looking for a steam line layout of the Bayonne, N. J., refinery of Standard Oil, get in touch with Lobby. He'll send you a carbon copy, yeh!

I know I have omitted some of the lads, but lack of space and definite information prevent further elaboration. If any of

you have material to offer, kindly communicate with me. — ROBERT M. ROSSI, Secretary, 529 Columbus Avenue, Boston, Mass.

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1934

As most of you probably know, the All-Technology Five-Year Reunion is being replaced this year by a celebration on one day. The week-end preceding this Alumni Day, which falls on June 3, will be devoted to separate and distinct class reunions. All classes holding reunions will then converge in Boston for an All-Technology get-together on June 3. However, this has little to do with us at this time, since our class President has just notified me that our first reunion will not be held until 1939, at which time we shall have been away from Tech for five years. Those of you who are, or plan to be, in Boston on Alumni Day of this year should take in the events that have been planned, some of which are the 50-year jubilee of the Electrical Engineering Department, and the grand dinner and concert in Symphony Hall, the whole of which is to be taken over by the Institute for this occasion. Attend if you can, but for those of you who are far from Boston, save your pennies for four more years, at which time we'll all be seeing you.

A letter from Paul Wing, Jr., which arrived here late in February, has thrown some light on his doings, and also on those of his side-kick at Tech, Johnny Moomaw. Paul has been with the Universal Oil Products Company since February 1, and is located at Hammond, Ind. He explains that his employers are the owners and licensors of the Dubbs process for making cracked gasoline. He is training to be an operator, whose job it is to travel around starting up newly installed plants. Although he says the work is interesting, Paul finds fault in one feature of it, namely the midnight shift, because it raises hell with his sleep. As for Johnny Moomaw, he has been working for some time in Newark, N. J., for the Krebs Color and Pigment Corporation. His training days completed, Johnny is now in the development laboratory proper.

Here is the low-down on Course V, as reported by Frank Cross. Some 50% of its graduates are back at school. Kaupinan is at Harvard Medical School and six others are at Tech. Levatinsky and Lockhart are working on biochemical compounds in Building 6. Kaminsky was continuing his work under Professor Harris when interrupted by the latter's accident. Miller is reading CO₂ densities for Professor Dietrichson. McLean is holding down George Barker's job as assistant in 4-440 (George is with National Aniline). David Horvitz is working in Building 6, problem unknown.

As was reported before, Len Shapiro is with Keuffel and Esser in Hoboken, N. J., and Eddie Nowell is still with Procter

1934 Continued

and Gamble. Eddie was back at Tech two months ago getting the low-down on seniors for P & G. Will Chandler has had two jobs since graduation. He was in a state laboratory for a few months, after which he was taken on by Atlantic Research, Inc., of Cambridge. Frank (Cross, remember; he is the fellow who has reported all this) adds that he is still living at the same place in Boston (1179 Boylston Street), walking across the same Harvard Bridge every day (the one across the Charles River between Boston and Cambridge), and walking past the same old Tech (M.I.T. to you) to Lever Brothers. Frank got the job last August when Phil Bruce '32 went from Lever Brothers to Simplex Wire and Cable, but even at this time he says there is plenty to know about soap.

Tidbits. Dick Gouchoe was in Cambridge for New Year's. He has been working for Central Vermont Power since last summer and is now working on an efficiency survey of their hydroelectric plants. George Fickett is reported working in New Jersey; does anyone know where? Kevvy Malone is not with the P & R Coal Company, but is out in California, Scott Bar, to be exact, where he started work about February 1, extracting gold by hydraulicking some one million cubic yards in three years.

Had this been written and turned in for publication two days earlier, you who read this column might never have known what became of your Secretary. It seems that on this very day, March 22, he was offered a job, and however strange it may seem, he accepted almost immediately. To get down to "trass backs," I am sailing on April 6, or perhaps I should say will have sailed, on the S.S. *Santa Barbara* for Antofagasta, Bolivia. I will be employed by the Compania Huanchaca de Bolivia as a mine surveyor. As far as I know at this time, I shall be at the Unificada Mine, which is in the interior of Bolivia at a town called Pulacayo. However, please do not let this stop you from writing, because I still intend to contribute to this monthly bit of gossip, and what is more, I want to continue to be the first to hear most of it.

Hoyt Steele, who is Assistant Secretary as well as our Class Representative on the Alumni Council, will have the main job of collecting data from now on, and I hope that he will have as much support as I did from you all. — ROBERT C. BECKER, *General Secretary*, Compania Huanchaca de Bolivia, Pulacayo, Bolivia, S.A. HOYT P. STEELE, *Assistant Secretary*, 27 Beechwood Street, Quincy, Mass.

**Plan to Attend
Technology's Homecoming Alumni Festival
On June 3**

COURSE XIV

A last bit about the electrochemists before The Review takes it summer vacation. There have been no particular changes in the activities of the fellows since the last writing. We still can't get in touch with Rudy Churchill (Note: Rudy is back from Texas and is living at 35-34 84th Street, Jackson Heights, N. Y. His 'phone is not listed, and the N. Y. Telephone Company was not at liberty to divulge it when attempts were made to contact him. — R.C.B., Gen. Sec.) Kawecki is his old self again; completely recovered from the fluoride attack, he is now back in the research department of the Beryllium Corporation, almost entirely on his own. He is at work improving the efficiency and economics of several of the processes and decided success seems to be coming his way. Port Huron seems to be a lonesome place — "a wife or a dog would help" — but the situation is somewhat relieved by his having put his four-wheels-and-a-brake back in the running. Still he longs for the old Buick. Remember it? We have heard favorable reports of Best down at New Jersey Zinc. And the good word has come direct from his superiors. We cannot, however, help smiling at the following incident. Given a certain problem by his immediate boss, Georgie buried himself in the nooks of the library for a few days. After about three days, said boss finally found Georgie to tell him he'd satisfactorily solved given problem in the laboratory. Just another bout between the hit-or-miss practical man and the

methodical, thorough technical man. Never mind, Besty! He who laughs last — ! Mert Neill is fast rising above us. He's working hard, long hours and gaining an immense amount of training and general information in the patent law office. He tells us he now has his own office and almost his own stenographer. We say almost because he says he shares one pretty little stenog with one other man. Of course, we know what he means! He works most every evening; in fact, he's willing to tell us what he does every night but Sunday. Do you suppose he goes to church then?

The three hangers-on, Mooradian, Nashner, and Knight, survived the first term of the old grind. The old feeling is upon them: counting the remaining weeks and wondering if they ought to start the thesis. Perhaps next week they'll dust the apparatus off. No important disclosures have yet been made by these three hard-working young men. Vic seems to be the one running off with a record rating this year — it isn't even fit to print. Stan is training now; the old spine's weakening. Sid is indifferent; he prefers to go to neither extreme. At this writing, but ten weeks remain. Then what? Stan is certain he won't return next year; Vic and Sid still have open minds about the matter. Although no enviable position is awaiting Mr. Knight, he feels certain of employment for the summer. He still can dish ice-cream cones down by the seashore where the so-so *femmes* disrobe — or practically so. That would not be at all bad if better work were assured in the fall. Vic and Sid have been somewhat more active in trying to find out what to do after graduation and seem to be getting somewhere. They stand pretty good chances of getting placed if they so desire because the metallurgical field, in which they are now majoring, looks rather bright this year. However, let's wait and see if the three of them can graduate this June, then worry about their futures afterwards.

Good luck and a pleasant summer to all the fellows! — STANLEY S. KNIGHT, *Secretary*, Box 70, M.I.T., Dorms, Cambridge, Mass.

COMPARATIVE SCHOLASTIC STANDINGS OF FRATERNITY AND DORMITORY UNDERGRADUATE GROUPS AT M.I.T.
(as of end of First Term, 1934-35)

Comparative Standing (based on February '35 ratings)		Increase over June '34	Increase over Feb. '34
Fraternity Seniors.....	3.32	*0.15	0.03
Dormitory Seniors.....	3.35	*0.23	*0.16
Fraternity Juniors.....	3.16	0.01	0.18
Dormitory Juniors.....	3.37	0.21	0.37
Fraternity Sophomores.....	2.91	*0.36	*0.12
Dormitory Sophomores.....	3.10	*0.29	*0.06
Fraternity Freshmen.....	3.03	0.03	0.08
Dormitory Freshmen.....	3.21	*0.10	*0.05
General Average..... (Fraternity)	3.10	*0.13	0.05
General Average..... (Dormitory)	3.25	*0.11	0.01

FRATERNITY SCHOLASTIC STANDINGS

Comparative Standing of 25 Chapters (based on February '35 ratings)	Increase over June '34	Increase over Feb. '34	Comparative Standing of 25 Chapters over previous five-year period	Comparative Standing of Freshmen of 25 Chapters	Rating Feb. '35	Comparison with Chapter Rating
1. Alpha Kappa Pi.....	3.34	*0.20	*0.30	1. Phi Delta Theta.....	3.53	+0.247
2. Delta Upsilon.....	3.325	*0.25	0.401	2. Delta Tau Delta.....	3.52	+0.21
3. Theta Delta Chi.....	3.321	0.109	0.261	3. Sigma Nu.....	3.46	+0.49
4. Delta Tau Delta.....	3.31	0.145	0.361	4. Chi Phi.....	3.44	+0.158
5. Phi Delta Theta.....	3.283	*0.107	0.033	5. Phi Gamma Delta.....	3.36	+0.286
6. Chi Phi.....	3.282	*0.268	0.085	6. Beta Theta Pi.....	3.33	+0.256
7. Phi Mu Delta.....	3.26	*0.26	0.00	7. Alpha Tau Omega.....	3.225	+0.105
8. Kappa Sigma.....	3.259	*0.051	0.019	8. Delta Upsilon.....	3.223	-0.102
9. Sigma Chi.....	3.212	*0.101	0.412	9. Sigma Alpha Mu.....	3.19	-0.013
10. Sigma Alpha Mu.....	3.203	0.083	0.513	10. Phi Beta Delta.....	3.15	-0.007
GENERAL AVERAGE ALL UNDERGRADUATES.....	3.18	*0.16	0.02			
11. { Delta Psi.....	3.157	*0.083	0.147	11. Phi Delta Theta		
{ Phi Beta Delta.....	3.157	*0.039	*0.003	11. Theta Delta Chi.....	3.14	-0.181
12. Alpha Tau Omega.....	3.12	0.28	0.35	GENERAL AVERAGE ALL FRESHMEN.....	3.11	
13. Phi Kappa Sigma.....	3.11	*0.208	*0.22	12. Delta Psi.....	3.06	-0.097
AVERAGE ALL FRATERNITY MEN.....	3.10	*0.13	0.04	GENERAL AVERAGE FRATERNITY FRESHMEN.....	3.03	
{ Beta Theta Pi.....	3.074	*0.366	*0.206	13. Phi Beta Epsilon.....	2.99	+0.18
{ Phi Gamma Delta.....	3.074	*0.113	*0.124			
15. Phi Sigma Kappa.....	3.02	*0.189	0.11	14. Sigma Chi.....	2.96	-0.252
16. Phi Kappa.....	3.005	*0.195	0.195	15. Delta Kappa Epsilon.....	2.949	-0.025
17. Sigma Alpha Epsilon.....	3.001	*0.219	*0.139	16. Phi Kappa Sigma.....	2.948	-0.162
18. Delta Kappa Epsilon.....	2.974	*0.016	0.004	17. Kappa Sigma.....	2.87	-0.389
19. Sigma Nu.....	2.97	*0.224	0.023	18. Phi Mu Delta.....	2.83	-0.43
20. Theta Xi.....	2.87	*0.11	*0.21	19. Phi Kappa.....	2.77	-0.235
21. Phi Beta Epsilon.....	2.81	*0.33	*0.145	20. Sigma Alpha Epsilon.....	2.73	-0.271
22. Lambda Chi Alpha.....	2.66	*0.20	*0.261	21. Phi Sigma Kappa.....	2.53	-0.49
23. Theta Chi.....	2.63	*0.526	*0.52	22. Theta Chi.....	2.40	-0.23
				23. Theta Xi.....	2.30	-0.57
				24. Lambda Chi Alpha.....	2.02	-0.64
				25. Alpha Kappa Pi.....	No Freshmen	

*Decrease

